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Toulouse: Embracing the knowledge economy

Pathways to creative and knowledge-based regions

ACRE report 2.11

Edited by

Elisabeth Peyroux

Denis Eckert

Christiane Thouzellier

Toulouse: Embracing the knowledge economy

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Regions within the Enlarged Union

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ACRE

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EXECUTIVE SUMMARY

The development path of Toulouse has been based on an early specialisation in electricity and aeronautics and has been driven by major investments in higher education and research. As a result Toulouse emerged as a technopole and as a knowledge-intensive regional centre as early as in the 1960s. Toulouse appears more as a city of knowledge and technological innovation than as a creative city in terms of art, culture and other creative industries.

Economic specialisation in high technology (aeronautics, space sector, electronics, computer activities) and the importance of Research & Development have been largely driven by public policies. Decentralisation policies in particular have played a key role in shaping and strengthening the economic bases of Toulouse. The city, which was a commercial and administrative centre in the 19th century with no heavy industry (except chemicals), had missed the Industrial Revolution and lagged behind in the major accumulation processes that occurred in other cities such as Lyon, Marseille or Bordeaux. In the 20th century, relocation of key military and aerospace industries to Toulouse by the French central government reawakened the city. Deconcentration and decentralisation policies also included the transfer and the creation of several education institutions specialised in engineering and research. In an ironic twist of history, what was once a big liability for Toulouse has now become its best asset: missing the Industrial Revolution has spared Toulouse the environmental damage and painful socio-economic restructuring that are plaguing so many northern European industrial cities.

In contrast to former industrial cities Toulouse enjoys one of the highest rates of employment growth in France. The predominance of tertiary activities has been reinforced during recent years, in particular due to the rise of business services linked to aerospace and computer activities. The ‘technological intensity’ of Toulouse has increased with the growing share of highly qualified services. While industrial activities linked to aeronautics and space such as electric and electronic equipment and components, metallurgy and metal transformation constitute the core of economic specialisation, agribusiness mainly linked to biotechnologies has also recently emerged. These two specialisations have been reinforced through State policy implemented at regional level and involving financing and structuring ‘competitive clusters’ across regional boundaries.

While public policies played a key role in shaping the economic bases of Toulouse, private stakeholders have also contributed to local dynamics. New forms of governance have emerged with the growing influence of private firms, in particular the large ones. The Airbus firm and the industrial aeronautics milieu are well integrated into the local administrative apparatus and the local economic sphere. Private firms have benefited from the active policy conducted by the State and the Region to support industrial development through technological innovation and applied research. The achievement of the Aeroconstellation

project illustrates the efficiency of partnership between private and public local, regional and national stakeholders and the affirmation of a consensus when dealing with significant projects in terms of wealth and job creation.

As a result of specialisation in high technology, education and research, Toulouse displays distinctive features: the population has a high level of education compared with other cities in France; the share of highly qualified occupations and intermediate occupations has been increasing over the past decade while the share of workers and employers has declined; Toulouse is also one of the urban areas in France that has the highest household incomes. Benefiting from its status as Europe's capital of the aerospace industry, as well as from the flow of population from the industrial belt to the sunbelt of Europe, the Urban Area of Toulouse doubled its population between 1960 and 2000 (while the population of France increased only by 30 per cent). Strong demographic growth, mainly fuelled by migration, places Toulouse among the most dynamics urban areas in France and demonstrates its attractiveness.

But the city has to face increasing social challenges that are closely linked to its economic specialisation. The development of clusters of high technology activity relying on a highly qualified workforce has generated strong territorial and socio-economic disparities between those municipal areas, which have the means to attract innovative firms and high income social groups, and other municipal areas with more traditional sectors and activities. The combination of business parks and housing schemes forming specialised 'Centres of excellence' and associated with major urban renewal projects tends to reinforce socio-spatial disparities. Neighbourhoods predominantly inhabited by highly qualified and well-paid professionals (including migrants from Northern Europe), in the central city and the suburbs, stand in contrast with neighbourhoods with a high concentration of less educated and unemployed people (including migrants from Maghreb). In addition, rents and house prices have been increasing over recent years and middle-lower income households, who cannot afford to access property ownership in the central city and the suburbs, are pushed further away in the sparsely populated and remote periurban areas. Major upgrading and renewal programmes have been implemented to reduce social disparities but, despite an increase in public funds dedicated to social housing, this sector comprises a small share of housing in Toulouse and rental social housing remains insufficient while demand is increasing. Is the economic development model therefore conducive to social integration? This raises the issue of the professional integration of people with low or no qualification in a highly specialised urban area.

In conclusion, Toulouse, as a technopole and knowledge-intensive regional centre, is neither in search of new activities nor of a shift in economic specialisation. Rather its aim is to maintain a cumulative process of capitalising and building on its assets in technical and human capital. The development of high technology such as satellite imagery and navigation should be seen in the continuation of activities generated by the aerospace industry. There is no search for a new economic profile, except where biotechnology and health are meant to replace chemical industries and diversify the economic base. But these sectors are also in the fields of high technology, research and development. In this respect, Toulouse does not have

to ‘reinvent himself’ unlike regions or cities which previously specialised in manufacturing. Toulouse has therefore good points of departure for creative knowledge city strategies.

INTRODUCTION

Focus of the report

The report focuses on key aspects of Toulouse's development path to allow for easy comparison between the specificities of the '*Ville rose*' and those of the other 12 cities studied in the ACRE programme. By looking at the main economic and social processes the authors have deliberately put aside other aspects which would *per se* deserve detailed analysis.

Definition of the studied area

The 'Urban Area' of Toulouse (UAT) as defined in 1996 by the French National Institute of Statistics (INSEE) was chosen as the analytical unit for the analysis of the 'metropolitan region' of Toulouse. An 'Urban Area' is defined as a set of communes (municipalities) situated on an unbroken and enclave-free tract of land, comprising an 'urban pole' and rural or urban communes (periurban ring), in which at least 40 per cent of the resident working population work in the pole or in the communes linked to the pole. In 1999, there were 354 urban areas in metropolitan France (as against 361 in 1990). An 'urban pole' is an agglomeration of communes offering 5,000 jobs or more. The French definition of 'urban', with its low population threshold of 2,000 inhabitants, can appear to be extremely extensive compared with that used in other countries.

The UAT includes 342 communes. It stretches over 4,015 km² and has a population of 965,000 inhabitants according to the 1999 national census. The UAT extends over six départements (Haute-Garonne, Tarn-et-Garonne, Tarn, Aude, Ariège and Gers). Only 34 out of the 342 communes are located outside Haute-Garonne. These 34 'outer' communes account for only two per cent of the total population. The UAT is located within the Midi-Pyrénées region, except for two communes situated in the Languedoc-Roussillon region.

The UAT is characterised by a low density (240 inhab./km²) compared with other urban areas such as Aix-Marseille (1,500,000 habitants, 2,830 km², 139 communes: about 530 inhab./km²).

Toulouse accommodates many administrative headquarters, which depend either on the central State or on local political bodies: this includes the Prefecture and the Regional Council of Midi-Pyrénées Region as well as the General Council of the Haute-Garonne Department. Departmental and regional institutions are *de facto* involved in the politics of the Urban Area. This Urban Area does not correspond to a single administrative and management unit: *there is no metropolitan government at the scale of the UAT*. As a result, there is a complex pattern of different layers of local administration, including municipalities and inter-communal structures.

1 NATIONAL BACKGROUND OVER THE PAST 20 YEARS

1.1 Urban and demographic context

The population of France is estimated at 63,4 million inhabitants in 2007 (60,7 in metropolitan France, including Corsica, 1,8 in the Overseas departments). This represents about 14 per cent of the EU population before enlargement (25 countries). France is the second most populated country in Europe after Germany (INSEE, 2007a). Average density for metropolitan France is 112 inhab./km² (INSEE-Midi-Pyrénées, 2007).

1.1.1 Patterns of urbanisation

Between 1936 and 1999 France's urban population has doubled (from 22 to 44 million persons), while the total population only grew by 40 per cent. The urban population increased by 2,3 million between 1990 and 1999) and accounts for 76 per cent of the total population (INSEE, 2006a). *Urban sprawl* has been one of the major trends since the 1960s (Le Gléau, Pumain, Saint-Julien, 1997). *Periurban areas* are the fastest growing areas, but seem to be less dynamic than in the 1980s (Bessy-Pietri, 2001). Paris, Lyon, Marseille and Lille are the four largest agglomerations in France (Table 1.1). Patterns of urbanisation display strong disparities over the national territory. The Paris region (Île-de-France) is still the main economic driving force: with 18.7 per cent of the national population, the capital region concentrates 22.4 per cent of employment and contributes by 28.2 per cent to the Gross Domestic Product (GDP). Between 1993 and 2001 Île-de-France has attracted most of the Foreign Direct Investment (FDI) in France, ranking 3rd in the EU after Greater London and Catalonia.

Table 1.1 The first ten urban areas in France (1999)

Ranking in 1999*	Urban areas	Populatio n in 1999	Variation between 1990 and 1999	
			Number	Average per year (per cent)
1	Paris	11,174,743	315,084	0.32
2	Lyon	1,648,216	97,083	0.68
3	Marseille-Aix-en-Provence	1,516,340	61,218	0.46
4	Lille	1,143,125	32,230	0.32
5	Toulouse	964,797	123,645	1.53
6	Nice	933,080	41,761	0.51
7	Bordeaux	925,253	54,019	0.67
8	Nantes	711,120	66,803	1.10
9	Strasbourg	612,104	43,140	0.81
10	Toulon	564,823	33,752	0.69

Source: INSEE National Census, 1999

* 1999 delimitation

1.1.2 Demographic trends

Demographic trends in France have been characterised by a steady *increase in birth rates* over recent years. With 200 children per 100 women the French total fertility rate was the second in Europe in 2006. *Life expectancy* is also increasing and is above the EU average: it reaches 77 years for men and 84 for women (INSEE, 2006a). France is however *ageing* the population over 65 represents 16.2 per cent of the whole in 2007 against 15 per cent in 2004. *Migration* only accounts for 25 per cent of demographic growth compared with 80 per cent of the growth of the EU as a whole. INSEE estimated that 4,9 million foreign-born immigrants live in France (8 per cent of the population). 66 per cent of new immigrants are Africans. France displays fewer *demographic differences than 20 years ago* (Brunet, 2001), but there are still major disparities within the national territory (Degorre, 2007).

1.2 Economic development

With a total GDP of €1,557 billion in 2003 France ranks 4th among industrial countries, well behind the USA, Japan and Germany, and close to Italy and the United Kingdom (French GDP 2005: €1,710 billion).

The economy and society in France have undergone major changes since the end of World War II: the main ones are the liberalisation of the productive system and the dramatic growth of the tertiary sector (Tables 1.2 and 1.3), which gave a strong impulse to the development of the main urban areas (Noin, 1998).

Table.1.2 Employment by branch of economic activity in France (1990-2005) (per cent)

Branch of activity	1990	2000	2005
Agriculture	5.7	4.0	3.6
Manufacturing industries	19.5	15.9	14.1
Construction	7.4	6.0	6.4
Services	67.4	74.1	75.9

Source: INSEE, 2007c

Table 1.3 Key employment indicators in France (1990-2005)

	1990	2000	2005
Participation rate (per cent)			
Men	64.2	61.7	61.7
Women	45.3	47.4	49.3
Employed workers (thousand)	22,322	23,327	24,921
<i>Of which women (per cent)</i>	<i>42.2</i>	<i>44.8</i>	<i>45.8</i>
Occupations			
Farmers (per cent)	5.3	2.7	2.6
Managerial and professional (per cent)	11.0	13.8	14.7
Intermediate white-collar professional (per cent)	19.5	21.0	23.1
Office workers (per cent)	26.9	28.9	29.0
Manual workers (per cent)	28.3	26.8	24.0
Part-time employment (per cent)	11.9	16.9	17.2
<i>Of which women</i>	<i>23.6</i>	<i>31.1</i>	<i>30.8</i>

Unemployment			
Unemployed (ILO definition) (thousand)	2,254	2,604	2,717
Unemployment rate (per cent)	9.2	10.0	9.8
Men	7.0	8.5	8.0
Women	12.0	11.9	10.8
Under 25	19.2	20.8	22.8

Source: INSEE, 2007c

The State in France played a major role in the economy after World War II, compared with other Western countries, by controlling key sectors (credit, energy, transport, telecommunications) and using incentive planning. Both production activities and social life were subjected to various regulations (among them price control), despite the free-market orientation of the European Union (Noin, 1998; Damette, Scheibling, 2003). The liberalisation (privatisation, deregulation) of the economic system came late, from the mid-1980s onward. Economic incentive planning declined and was abandoned in the early 1990s. The role of the State however stays important in sectors such as transport and energy. Public employment is high (one out of four workers) and the welfare-state remains strong.

At the beginning of 2005, metropolitan France had a labour force of 28 million. 72 per cent of working-age people had a job or were looking for one. The active population includes more women, is older and more qualified than in 1999. The historic rise in the number of working women is continuing. Unemployment in France rose in the 1970s (7 per cent in 1980, 10 per cent in 1985, 12 per cent in 1997 or about 3 million people) above the European average. Employment rates are still far from those envisaged by the European Summit in Lisbon, especially for senior workers (55-64 years). The unemployment rate has been declining over recent years, but the employment rate for the whole working-age population is stable at 62 per cent.

France remains the world's most popular tourist destination, ahead of Spain and the United States, having welcomed 76 million visitors from abroad (2005).

1.3 Socio-demographic structure

In 1999, there were 23,8 million households in metropolitan France. Households are becoming smaller. There has been a substantial increase in the number of unmarried couples, childless couples, and single-parent families. More than one-half of French households comprise one or two persons. People living alone occupy one in three dwellings; one in four dwellings are occupied by a childless couple (INSEE, 2006).

1.4 Regional and urban policies

1.4.1 Local government and decentralisation policies

France, a unitary state, is one of the few countries in the European Union with *four tiers* of government - the State or central government, *Région* (22), *Département* (96) and *Commune* (about 36,000). There is a strong legacy of highly centralised political power, but

decentralisation policies have been implemented in France since the early 1980s (under the Mitterrand presidency). Local government bodies progressively gained responsibilities in fields such as land settlement, economic development, urban policies or social care. Decentralisation policies gave the *Départements* and *Régions* far greater autonomy in decision-making by sharing administrative and budgetary tasks between central and local authorities. The 1982 law also made several changes concerning financing. Any transfer of State competence to a local authority must be accompanied by a transfer of resources (chiefly fiscal). In practice, local taxes have tended to rise.

There are *three main tiers of local government* (also referred to as local authorities) (Table 1.4): the *Commune*, *Département* and *Région*. Legally speaking, a local authority is a public-law corporation with its own name, territory, budget and employees, and has specific powers and a certain degree of autonomy vis-à-vis central government and its local representatives (the *Préfet* being the main one). Each tier of local government enjoys full autonomy vis-à-vis other local administrative levels. In other words, the *Département* or *Région* administration can hardly mix in the tasks and decisions of a commune. Each tier is managed by an assembly elected by the population (Commune: *Conseil municipal*; Département: *Conseil général*; Région: *Conseil régional*). The assembly then elects a chief executive and his/her deputies.

Table 1.4 Three tiers of local government in France

1.4 a: The communes (about 36,000 entities)

The commune is the lowest tier of the administrative structure. There are many more communes in France than in the other EU countries. The term ‘*commune*’ applies to *all municipalities* whatever their size – 80 per cent of them have fewer than 1,000 residents. Mergers are extremely rare, as both residents and local councillors often retain a strong sense of identity with their communes. This situation has led the government to encourage communes to group together in various forms of associations (*Communautés urbaines* or *Communautés d’agglomération*, *Syndicats intercommunaux*, *pays*, etc.), through several laws (1992, 1999, 2000).

Like the department and region, the commune has a deliberative or decision-making body (*Conseil municipal*, the municipal council) and an executive (the Mayor), elected by the municipal council. The Mayor is both the commune's elected authority and the State's representative in it. The number of municipal councillors is proportional to the population. Municipal councillors are elected for six years by direct universal suffrage. The commune's powers cover activities that affect its inhabitants' daily lives. Its economic and social duties were limited for a long time to granting aid for job creation and helping needy families but have been broadened to enable it to play an important economic and social role.

Intercommunal structures

The complex pattern of local administration, with a high level of fragmentation, gave birth to an intense process of local cooperation.

There are two types of intercommunal structures:

* Those without fiscal power (traditional syndicates of communes). Communes gather and contribute financially to the syndicate, but the syndicate cannot levy its own taxes. Communes can leave the syndicate at any time. Syndicates can be set up

for a particular purpose (typically: waste management) or to deal with several matters. These structures without fiscal power are on a declining trend.

* Structures with fiscal power. The law voted under the Minister Chevènement (1999) distinguishes three such structures: the Community of Communes (*Communauté de communes*), primarily targeted at rural communes; the Community of Agglomeration (*Communauté d'agglomération*), targeted at towns and middle-sized cities and their suburbs; and the Urban Community (*Communauté urbaine*), targeted at larger cities and their suburbs.

These three structures are given varying levels of fiscal power. The Community of Agglomeration and the Urban Community have most fiscal power as they levy the local tax on corporations (business tax or *taxe professionnelle*) in their own name instead of those of the communes. The communities also manage some services previously performed by the communes. Communities of Communes have a more limited set of competences and the communes are more autonomous. The Urban Communities perform more tasks on behalf of the communes.

Government allocates money to the communities based on their population, thus providing an incentive for the communes to team up and form communities. Urban Communities receive the largest amount of money per inhabitant.

1.4 b: The Départements (96 entities in metropolitan France)

There are 100 departments in France, 96 in metropolitan France and four overseas (Martinique, Guadeloupe, Réunion and French Guyana). Established in 1789, the *Département* has played a prominent role in the country's administrative and geographical organisation. The *Département* in its present form has essentially competence in health and social services, rural capital works, departmental roads, and the capital expenditure and running costs of colleges (1st level high schools).

The law of 2 March 1982 conferred executive authority for the department on the chairman of the general council. The *Conseil général* (general council) is the department's decision-making organ. It is made up of general councillors elected for a six-year term, who elect a *Président* (chairman) also for a six-year term. The last wave of decentralisation (2004-2007) launched by Prime Minister Raffarin led to the rise of the competences of *Départements*, who are now in particular in charge of a considerable share of local, regional and transregional roads. A significant number of former State civil servants have lately become part of the *Départements'* staff.

The *Préfets*: For almost 200 years (1800 to 1982), Prefects held the executive power in the departments, but the law of March 1982 modified their powers. Appointed by the government, the Prefect is still the sole person empowered to act on the State's behalf in the department. Prefects represents the Prime Minister and all the members of the government, has authority over the State's external services in the *Département* and ensures the administrative supervision of all local authorities.

1.4 c: The Régions

France has 26 regions, 22 in metropolitan France and four overseas. Created in 1955 to provide a framework for regional and town planning, the region became a local authority in 1982. Its main spheres of competence are planning, regional town and country planning, economic development, vocational training, and the building, equipment and running costs of 2nd level high schools (*lycées*).

The decision-making organ is the *Conseil régional* (regional council) whose members are elected for six years. They are assisted by an economic and social committee, which is a consultative assembly. The *Président de Région* (regional council chairman), elected by the *Conseillers régionaux* (councillors), is the region's executive authority. His/hers responsibilities are identical with those of the general council chairman in the areas within the region's sphere of competence.

Source: based on Swift, Kervella 2003

The resources of local government bodies come from direct rates and taxes (29.4 per cent), State funding (29.3 per cent), indirect rates and taxes (22.2 per cent), loans (10.5 per cent), and other resources (8.6 per cent) (Marconis, 2006).

After 20 years of decentralisation 60 per cent of public spending comes from the State and 40 per cent from the local authorities. The share of the communes and their groupings is greatest (56 per cent), followed by departments (33 per cent) and the regions (11 per cent).

The process of decentralisation has profoundly altered local government in France. The current system is indisputably more costly for the public purse than the old one and has led to some fragmentation of tasks and objectives. However, decentralisation is supposed to ensure that tasks are carried out at the most appropriate level of responsibility in all sectors of public life.

1.4.2 Urban policies

The policy of regional centres or *balancing metropolises* (*Métropoles d'équilibre*) launched by De Gaulle in the 1960s has contributed to shaping urban territories. The aim was to promote economic and urban development in 8 large cities (Lille, Nancy, Strasbourg, Lyon, Marseille, Toulouse, Bordeaux and Nantes). Measures included construction of infrastructure (Noin, 1998). In 1975 most of these cities no longer received State funds.

In the following period there was a shift of interest towards *medium-size towns* (73 towns between 20,000 to 100,000 inhabitants were concerned). Policies were implemented to upgrade the quality of the urban environment. This policy, although considered as positive, was abandoned in the late 1970s (Noin, 1998).

New cities policy was another component of early urban policies at national level. During the 1960s, five cities around Paris (Evry, Cergy-Pontoise, Saint-Quentin-en-Yvelines, Marne-la-Vallée, and Sénart) were created from scratch. Their population reached 650,000 inhabitants in 1990. In the 'Province' (the whole country outside Paris), four new cities were launched, with a single notable success: Villeneuve d'Ascq near Lille (it reached 65,000 inhabitants in 1990).

In addition to various funding schemes (from the French State and from the EU for a few regions) *delocalisation policies* also played a role in the development of cities. There were incentives for industry to leave the Paris region. Decisions to transfer selected public services

to other parts of the territory were also taken. New education institutions were also created outside Paris; existing institutions and public research centres were relocated to the regions (Noin, 1998).

In the early 1980s the degradation in many urban neighbourhoods led towards the implementation of a State policy for the cities (*Politique de la ville*) inspired by American and British experiences in areas with significant minority ethnic populations. The measures were targeted to *specific degraded neighbourhoods*. Social problems in large social housing estates were considered as linked to architectural or town planning failures. Early measures included a policy of Social Development of the Neighbourhoods (Politique de Développement Social des Quartiers, DSQ), Education Priority Zones (Zones d'Education Prioritaires, ZEP) (Marconis, 2006; Jaillet, 2005).

The 'Law for the City' (*Loi d'orientation sur la Ville*, 1991) made it compulsory to increase the amount of social housing in cities which had not reached a required level. In the mid-1990s priority shifted again towards neighbourhoods experiencing social problems with new types of measures (*Zone Urbaine Sensible*, ZUS, *Zone de Redynamisation Urbaine*, ZRU, *Zone Franche Urbaine*, ZFU) (Marconis, 2006) (see details on section 3 and 4).

More recently the 2000 law on Solidarity and Urban Renewal (SRU) established a new instrument for town planning: the Scheme for Territorial Coherence (SCOT). This instrument promoted a 10 to 20-year vision at inter-communal scale. In a given urban area, each municipal planning scheme must be made compatible with the SCOT (Marconis, 2006).

1.5 Economic development – creative industries and knowledge economy policy

1.5.1 Conceptual and methodological frameworks for creative and cultural industries

❖ *Creative industries – cultural sectors*

The notion of the creative industries, as defined in the Anglo-Saxon world, does not exactly apply in France. The Anglo-Saxon approach to creative industries generally includes printing, publishing and multimedia, audio-visual, phonographic and cinematographic productions, as well as crafts and design; in some cases also architecture, the visual and performing arts, sports, manufacturing of musical instruments, advertising and cultural tourism. In France most of the analyses are based on the notion of 'cultural industries' and the focus varies according to institutions. It may include part of the 'creative industries' as defined above as well as the arts and heritage (including cultural tourism) and the crafts (which are sometimes excluded from the creative industries). Cultural industries in France are seen within agendas of economic as well as social benefits (Greffé, 2006).

There are at least three different approaches to cultural industries in France:

- The Ministry of Culture and Communication defines 'cultural industries' as *contents industries* that combine functions of conception, creation and reproduction using

physical or communication support. It includes *sectors* that produce books, music, press, cinema, audiovisual and multimedia (Ministère de la Culture – DEP, 2006) (Table 1.5A in appendix). It is based on statistics on *firms* identified by the national classification of activities (NAF). According to this approach, cultural industries in France form a small-size sector. It represented 4 per cent of employment in commercial services and generated 8.5 per cent of sales figures in 2003.

- The Île-de-France planning agency (IAURIF) has adopted a restricted approach to cultural industries based on firms and a selection of NAF codes. These industries refer to production activities using support (publishing) and activities of flows. This includes cinema and video, radio and TV, book and press sectors, printing and music publishing. Under this definition the cultural industries in France employed 249,800 salaried staff in almost 19,500 establishments. The Île-de-France contains 45 per cent of the employment (113,400 persons) and 38 per cent of the firms (IAURIF, 2006) (Table 1.6A in appendix).

- INSEE (National Statistical Institute) has a more extensive approach based on ‘cultural sectors’. This includes publishing and libraries, press, radio and TV, cinema and video, architecture, visual and performing arts and art activities, conservation of cultural heritage. According to this analysis 430,000 persons were employed in the cultural sector in 2003. More than half of them (54 per cent, or 234,000 persons) work in publishing and libraries (90,000 persons), followed by press (78,000), radio and TV (35,000), cinema and video (31,000). Performing and art activities represent almost one quarter of total cultural employment (24 per cent or 103,000 jobs). Architecture represents 61,000 jobs and is partly linked to heritage conservation (35,000 jobs). Under this definition 43 per cent of cultural employment is concentrated in Île-de-France with more emphasis on cinema/video and radio/television (respectively 64 per cent and 74 per cent) and to a lesser extent press. Architecture and visual performing art are less developed (Ministère de la Culture–DEPS, 2005a) (Table 1.7A in appendix).

❖ *Cultural occupations*

Following the analysis in terms of cultural industries data available relate to cultural occupations. The INSEE has defined a list of occupations based on the national classification (PCS, Professions and socio-professional categories). They may or may not be working in a *sector* identified as cultural. *Cultural occupations* include cultural, administrative, financing and technical professions.

Cultural professions by INSEE:

Professionals in audio-visual and visual and performing arts (artists, technicians and executives); plastic art, art craft and art occupations (including photographs and stylists), literary professions (including journalists and authors), documentation and conservation professions, architects and art professors.

This list does not include typical ‘creative’ professions as defined by Anglo-Saxon authors, such as designers, publicists and the like. It includes professions in the conservation field (cultural heritage sector) that are generally not taken into consideration in other countries.

According to this analysis 440,000 persons, or about 2 per cent of the total working population had a cultural occupation in 2003. Occupations in *audio-visual* and in *visual and performing arts* as well as *plastic art*, *art craft* and *art occupations* represent 30 per cent of cultural occupations. Literary professions represent 62,000 persons, or 14 per cent of the total of cultural occupations; executives and technicians in documentation and conservation, architects and art professors represent each between 6 and 9 per cent of employment (Ministère de la Culture-DEPS, 2005b).

The main characteristics of cultural occupations are the following (Ministère de la Culture-DEPS, 2005b):

- Gender imbalance with an over representation of male: 61 per cent (compared to 55 per cent in the whole working population).
- A larger share of young professionals: 53 per cent are under 40 years old (47 per cent in the whole working population).
- A higher level of education: 55 per cent of have A Levels or completed two years studies after A Level (26 per cent in the whole working population)
- A high concentration in the Île-de-France region: 44 per cent of total cultural employment.
- A high share of non salaried staff: 28 per cent of them are self-employed (11 per cent in the whole working population).
- A higher insecurity in employment: one out of three salaried persons has a fixed term contract compared with 13 per cent in the whole working population; 22 per cent work on a part-time basis (16 per cent in the whole working population)

One should stress that none of these classifications include high-tech creative professions or sectors that are extremely important in the Toulouse area (see section 5).

❖ *Assessing the significance of cultural industries in France*

With about 434,000 persons employed in cultural sectors (by INSEE standards, see above), or 2.1 per cent of total employment, France is situated below the 2.5 per cent EU average (Greffé, 2006), but the employment is on the rise.

Household cultural expenses amount to €24 billion each year (audiovisual equipments and materials, books, newspapers, journals and show tickets). They represent a spending of €1,000 per year per household, a share of about 3.5 per cent that has been increasing over the past years. If one adds spending by firms and the public sector the market amounts to about 30,5 billions euros.

Among economic activities publishing and graphic industries are the leading ones (€15,2 billions of sales figures), followed by audio-visual activities (TV, records, cinema) (€10,67 billion)¹.

¹ www.diplomatie.gouv.fr

❖ Cultural funding and stakeholders

Funds allocated to the Ministry of Culture have been increasing over recent years (they doubled in the early 1980s) and reached €2,49 billion in 2003. If we take into consideration other public funds and credits that are allocated through various channels (social care, tourism), the State spends about €6,1 billion per year to finance culture.

Since decentralisation local authorities have gained competences in cultural field: budgets of departments and regions increased by a multiple of five during the 1980s and the budgets of the communes have doubled. Funds from all territorial authorities are higher than State funds (50.3 per cent compared to 49.7 per cent).

The cities are playing a significant role as they represent 40 per cent of public financing for culture. They are often engaged in a partnership with the State. The spreading of culture over the whole territory contrasts with a strong tradition of Paris hegemony.

Associations and firms are also engaged in culture. There are about 157,000 associations in cultural sectors, employing about 20,000 salaried staff. They often receive public subsidies. Festivals are mostly organised by associations.

Private patronage is an ancient phenomenon but corporate patronage is more recent and less developed than in the United States or Germany. An appropriate legal framework has been established (1987 and 2002 laws) and corporate patronage is increasing. Many large companies in France have promoted cultural activities through the creation of foundations and actions in heritage conservation (EDF, BNP-Paribas, Vinci Group)².

❖ Vision of cultural resources in France

Culture is seen as a factor making France attractive (for both firms and individuals): culture is linked to the quality of life including the physical and built heritage, the development of tourism, the creation of identities and the strengthening of social cohesion. Culture can be used as a regeneration tool in the city. The attractiveness of products is also important to ensure the export of cultural products (books, films, other audio-visual products). Finally attracting capital, in particular cultural private patronage, is seen as a relevant strategy (Greffé 1996).

1.5.2 Knowledge economy and information society

Like many other countries France has embarked upon various national policies and programmes to support the development of a knowledge intensive economy and information society. National policies to promote a knowledge economy have focused on innovation and technological research, through developing public private partnerships with firms and education and research institutions and through supporting entrepreneurship. The French government is developing an excellence policy to compete at European and international level.

² www.diplomatie.gouv.fr

❖ *ICT*

French government considers ICT as ‘the guarantee of a higher productivity and a stronger reactivity’³ at different levels:

- Culture and education: ‘ICT promotes a society where access to culture, knowledge and information will be easier and more largely shared while playing a key role in cultural, artistic and intellectual influence’.
- Politics: ‘a great means to open doors and establish new relationships between the citizens and public administration of elected officials’.
- Economics: ‘necessary for growth, employment and our influence in the world’.

ICT sectors are less important in France than in the United States, Japan or in the other European countries. In 2001 the share of technological sectors in French GDP as defined by OECD⁴ was 5.1 per cent compared with 8.1 per cent in the United States (but 4.8 per cent in Germany) (see Table 1.8 on R&D expenditures). Between 1991 and 2001 the production of ICT has slightly increased in France (+0.3 per cent). The country ranks 11th in Western Europe in terms of specialisation in ICT manufacturing (other than military equipment)⁵ (IDATE 2004). In terms of demand France represents 3.7 per cent of the world market with a predominance in telecommunications (which account for nearly half of sales in ICT sector) and computer industry and a rapid growth of services.

A wide range of policies and initiatives has been implemented over the past ten years, now coordinated by a ‘mission for digital economy’ (*Mission pour l’Economie Numérique, MEN*). Policies and measures include the following ones:

a) Supply-driven policies and measures:

- Reb/So 2007 Plan (For a digital republic within an information society) has been designed to promote high speed Internet and reduce major disparities in Internet access.
- E-administration: ADELE programme (*Administration Electronique*), for the development and implementation of electronic administrative services⁶.
- A National Network for Technology, Education and Research (RENATER) has been set up to develop top Internet infrastructures dedicated to education and research institutions⁷.

b) Demand-driven measures: Promoting use of digital resources among individuals, firms and higher education institutions:

- An information campaign has been launched to accelerate diffusion and appropriation of ICT among the general public.
- Measures are also taken to speed up diffusion of ICT within firms through calls for projects. They aim at reinforcing firm capacities in business intelligence, creating

³ www.internet.gouv.fr

⁴ ITC definition by OECD: telecommunications (services and equipments), computer sciences (services, software and equipments), processing of electronic control instruments, manufacturing of electronic components.

⁵ Specialisation index: ratio of manufacturing in ITC in GDP. 100: average for Western Europe (IDATE, 2004).

⁶ ec.europa.eu

⁷ www.renater.fr

virtual communities, developing e-business and establish teleprocedures with public administration⁸.

c) Networking between public research and industries

- Collaborative networks have been developed in different fields: telecommunications (*Réseau National de Recherche en Télécommunications*, RNRT), software technologies (*Réseau National de recherche et d'innovation en Technologies Logicielles*, RNTL), micro and nano technologies (*Réseau de recherche en Micro et Nano Technologies*, RMNT) and audio-visual and media (*Réseau pour la Recherche et l'Innovation en Audiovisuel et Multimédia*, RIAM)⁹.

d) National and European Legislation

- The French government is actively involved in the development of a legal framework for the digital economy. It is also involved in the transposition of the European legislation with regards to e-business, copyrights, deregulation of telecommunications, etc. and also participates in the policy of European governance (Ipv6)¹⁰.

❖ *Innovation and technological research/R&D*

R&D expenses represent 2.1 per cent of the GDP in France (about the European average). ICT activities, aeronautical construction and the pharmaceuticals industry in particular, are among the most R&D-intensive activities. 18 per cent of companies expenses in R&D are related to ICT (IDATE, 2004). The government has been conducting various actions targeted at innovation and technological research. Specific agencies dedicated to research and innovation have been created in recent years: the National Agency for Research (ANR), the Agency for Industrial Innovation (AII) and the group OSEO targeted to SMEs.

Table 1.8 R&D expenditure in France (1995-2005)

R&D	1995	2000	2005 (e)
National R&D expenditure (million euros)	27,563	31,438	36,107
Share funded by enterprises (per cent)	50.5	54.6	53.5
Domestic R&D expenditure (million euros)	27,302	30,954	36,396
Share funded by enterprises (per cent)	61.0	62.5	61.9
Domestic R&D expenditure as per cent of GDP	2.3	2.2	2.1
Number of researchers			
In the private sector	66,618	81,012	106,439
In government agencies	80,156	87,620	93,626

Source: INSEE, 2007c * International Monetary Fund.

Key governmental measures include the following (Ministère délégué à l'Enseignement supérieur et à la Recherche, 2005):

- *Mobility of researchers towards firms* (1999 law on innovation and research).
- *Promoting the creation and development of technological firms*: 'houses for entrepreneurship' on university sites, contests 'Initiatives for young people'; incubators for innovative firms linked to public research; national and regional funds for money allocation to firms capital (*fonds d'amorçage*).

⁸ www.industrie.gouv.fr

⁹ 160.92.130.199/technologie/infotel

¹⁰ www.ipv6.org

- *Education and training of young graduates to support their integration into firms.*
- *Support to young SMEs with R&D activities; tax incentives to increase R&D investments (crédit d'impôt recherche)*
- *Support to projects within the EU framework (EUREKA initiative).*
- *Pôles de compétitivité (competitive clusters): technological transfer, intellectual property and public private partnership (see also section 6): Development of 67 competitive and innovative (spatial) clusters in the coming three years (€ 1,5 billion). This policy is largely inspired by California's Silicon Valley. The six 'world-scale clusters' (projets mondiaux) meant to successfully compete at global scale are all specialised in high-tech. Among the other 'international clusters' multimedia in Île-de-France is the only one that is related to creative industries.*
- *Support to SMEs in the regions: setting up of Regional Centres for Innovation and Technological Transfer (CRITT), Technological Platforms (PFT) linked to education institutions, Technological Development Networks (RDT).*

1.6 Conclusion

France has embarked upon various national policies and programmes to support creative and knowledge-based industries. One should however state that the notion of 'creative industries' as defined in the Anglo-Saxon world is not generally used in France. Most of the analyses of sectors identified as 'creative' are based on the notion of 'cultural sectors' (printing and music publishing, press, cinema and video, radio and TV, audiovisual and multimedia), while the concepts of information society and knowledge economy are used to refer to knowledge intensive sectors (ICT, innovation and technological research, R&D). In France, culture is linked to the quality of life including the physical and built heritage, the development of tourism, the creation of identities and the strengthening of social cohesion. Culture is also used as a regeneration tool in the city. In that regard cultural industries in France are seen as part of an agenda of economic as well as social benefits. However, the share of cultural sectors and cultural occupations remains modest in France although financial support from the central State and the communes has arisen since the 1980s. Île-de-France region and Paris still contains the largest share of cultural employment and firms. Regarding the knowledge economy, ICT sectors are less important than in the United States, Japan or in the other European countries. R&D expenditure is close to the European average. ICT activities, aeronautical construction and the pharmaceutical industries in particular are among the most R&D-intensive activities. National policies have focused on innovation and technological research, through developing public private partnerships with firms and education and research institutions and supporting entrepreneurship. The French government is also developing an excellence policy to compete at European and international level.

2 INTRODUCTION TO THE REGION IN 2005

2.1 Geographic/demographical context

Occupying 8.5 per cent of the national territory, Midi-Pyrénées is the largest region in France (Table 2.1). It stretches over more than 45,000 km² (larger than Belgium or Switzerland). In 2006 there were 2,8 million inhabitants (4.5 per cent of the population of metropolitan France) (Figure 2.1). The region includes eight *départements*: Ariège, Aveyron, Gers, Haute-Garonne, Hautes-Pyrénées, Lot, Tarn and Tarn-et-Garonne (Figure 2.2). The Garonne River and four of its tributaries run through the region (Gers, Ariège, Lot and Tarn). The Pyrénées mountains form the border with Spain in the South and the Massif Central, located in the northeastern part of the region, forms the second main mountainous area. Although the regional language, Occitan, and its dialect, Gascon, have for the most part disappeared, they have left a strong imprint on the French spoken in the region.

Figure 2.1 The Midi-Pyrénées region and the Urban Area of Toulouse (UAT) in France

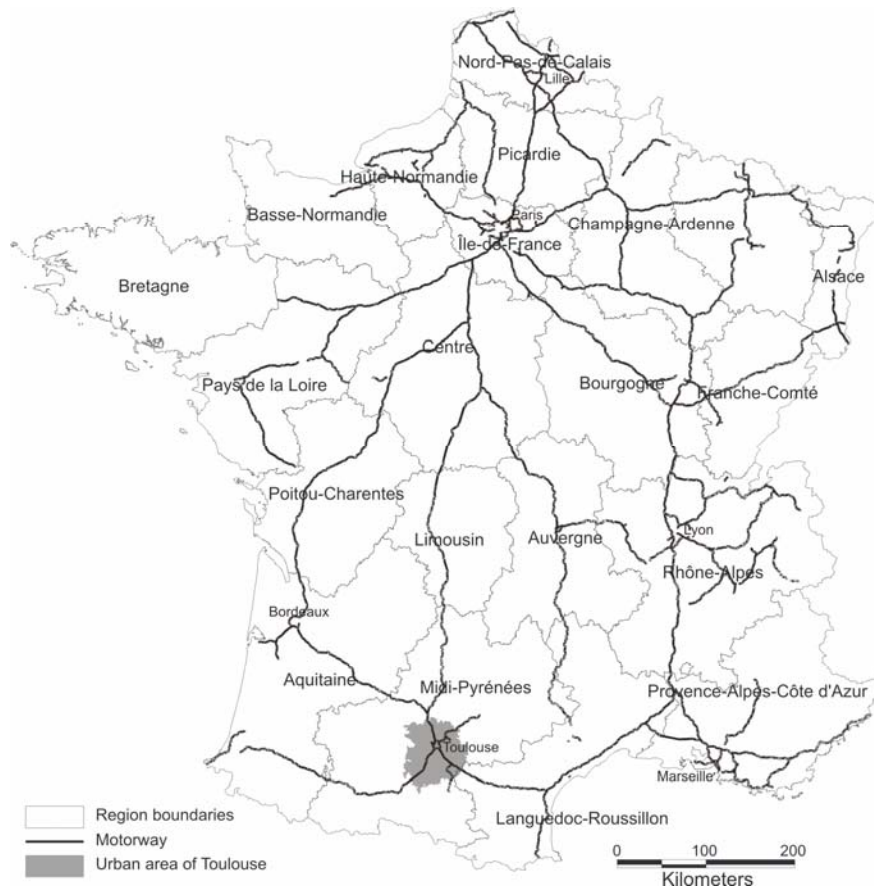
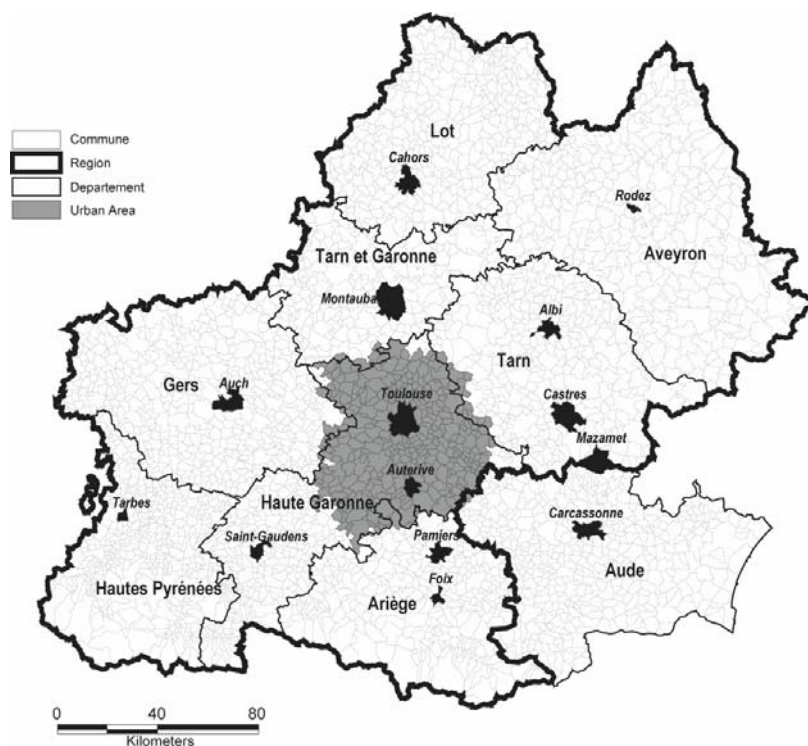


Table 2.1 Surface, population and density of Midi-Pyrénées compared to France and Europe (2005)

	Midi-Pyrénées	Metropolitan France	EU 25
Surface (km ²)	45,348	543,965	3,929,712
Population (inhab.)	2,731,000	60,825,000	457,100,000
Density (inhab./km ²)	60,2	111,8	116,3

Sources: INSEE-Midi-Pyrénées, 2007. Eurostat 2005. Agence de développement de la région Midi-Pyrénées 2006.

Figure 2.2 The UAT in the Midi-Pyrénées region

Midi-Pyrénées is located away from the main coastal routes running along the Atlantic Ocean and the Mediterranean Sea. In addition, the highway linking Bordeaux, Toulouse and Narbonne was only constructed in the early 1980s. This was later followed by the highway Toulouse-Bayonne, and even more recently by Toulouse-Cahors-Limoges in order to give Toulouse an express road connection to Paris (Laborie, 2006).

Midi-Pyrénées is often portrayed as ‘Toulouse and the Midi-Pyrenean desert’. Outside Toulouse, the region is sparsely inhabited. The region is positioned 20th out of the 26 regions of France in terms of population density (density is half the national average). The majority of the population (67 per cent) lives in a predominantly urban environment structured around 18 urban areas according to the INSEE definition. There is a strong imbalance between the UAT (nearly one million inhabitants in 1999) and the 17 other urban areas (682,000 inhabitants), the difference in population being from one to nine between Toulouse and the second most populated town, Tarbes. Urban sprawl is increasing and periurban areas now contain 18 per cent of the inhabitants and represent 20 per cent of the surface of the region (Marconis, 2006).

The central part of the region, dominated by Toulouse, has the appearance of a massive urban area as a result of both activities and suburban housing. But the region also has vast rural areas with sparse, ageing population and limited economic activity. Rural areas represent 68 per cent of the regional territory and 23 per cent of the inhabitants. Isolated valleys and rural surroundings, sometimes altered by the occasional industry, display one of the lowest densities in Western Europe (19 inhab./km²). This imbalance gives rise to the dual image of Midi-Pyrénées.

A dynamic region, both traditional and modern, Midi-Pyrénées needs to affirm its economic assets and to improve its road and rail accessibility, both with Paris (high-speed train projects) and with neighbouring Spain (planned roads and tunnels works).

❖ *Demographic context*

Midi-Pyrénées reached the 6th rank in France, in terms of population growth, during the period 1990-1999 (+0.55 per cent per year). Demographic growth has recently dramatically increased: during the period 1999-2005, the average growth was +1.2 per cent per year (French average: +0.7 per cent). Midi-Pyrénées now ranks second in France after Languedoc-Roussillon (INSEE Midi-Pyrénées, 2007). The growth is fuelled almost exclusively (91 per cent) by migration. Regarding interregional migration among the 22 regions of metropolitan France, Midi-Pyrénées had the second highest net immigration rate with 47 more arrivals per 10,000 inhabitants than departures (1990-1999). Net immigration has recently increased up to 67 per 10,000 inhabitants. (1999-2004).

In 1999, the foreign population accounted for 3.9 per cent of the total population of the region. This is below the national average (5.5 per cent). The foreign population comes mainly from the countries of the European Union (51.4 per cent); this percentage is much higher than the average for the regions outside Ile-de-France (39.2 per cent). Migration, increases in service employment and the decline in rural jobs have led to major shifts in the socio-economic composition of the population: retired persons, intermediate occupations, employees and executives have experienced the highest increase. There are approximately 115,000 students living in the region (Agence de Développement de la région Midi-Pyrénées, 2006).

Five of the eight *départements* experienced a positive annual average growth rate between 1990 and 1999. The most populated *département* is Haute-Garonne. With more than one million inhabitants, it has both a natural and migratory surplus. During the period 1999-2005 it experienced the fastest demographic growth among the 96 *départements* of metropolitan France (+1.7 per cent).

Life expectancy in the region is higher than the average level, and the population is ageing (Agence de Développement de la région Midi-Pyrénées, 2006). The proportion of the 60s plus age group is above national average and accounted for 25 per cent of the region's population in 1999. The share of the population under 25 years old (28 per cent) is below the national average. The age structure is reflected in the fertility, birth and mortality rates. With 159 children per 100 women the fertility rate in 1999 was well below national average (this is 20 children less than the national average for metropolitan France). In 1999 the crude birth rate

was 10,8 live births per 1,000 inhabitants compared with the national average of 12,9 live births per 1,000 inhabitants. The infant mortality rate (3,8 deaths of children under one year old per 1,000 live births) is below the national average. The crude death rate is above the national average with 10,3 deaths per 1,000 inhabitants, compared to the national average of 9,1¹¹.

2.2 Main economic specialisations

In 2000 the Midi-Pyrénées region accounted for 3.7 per cent of France's GDP. The region's GDP ranked 8th among the French regions in 2002 and was growing faster than the national average. The contribution of the region to France's gross value added of the agricultural sector was 5.4 per cent. The region's contribution to market services was 3.6 per cent, 4.5 per cent to construction, and 3.2 per cent to industry. Looking at per capita GDP, the Midi-Pyrénées ranked 12th among the French metropolitan regions in 2000. The GDP per inhabitant was 20,197 euro, compared with the average of the provinces of 20,638 euro per inhabitant.

The agricultural sector is still important in terms of employment in Midi-Pyrénées. At the beginning of 2001 employment in agriculture accounted for 6.5 per cent of total employment in the region (5.9 per cent in 2005), compared with 3.5 per cent on the national scale, but employment in agriculture is decreasing and the contribution of the sector to the region's value added is falling (1995: 4.5 per cent; 2000: 4.1 per cent) (Table 2.2).

Over the past two decades employment in industry has been characterised by the growing importance of the capital goods sector and the decline of the consumer goods sector. In 2001 the capital goods sector employed 37.1 per cent of all employees in industry (second highest proportion in France). The production of intermediary goods employed 42.8 per cent of all employees in industry. Compared with the average for the provinces (19.3 per cent) jobs in industry in the region are proportionally fewer: 15.8 per cent at the beginning of 2001. The construction sector represented 6.5 per cent of employment in 2001. This is roughly the same as the average for the provinces in general (6.3 per cent).

The tertiary sector continues to support the regional economy as a whole. In 2000-2001 the services sector accounted for 72 per cent of the region's GDP and 71.2 per cent of the jobs. The region's services sector is of comparable importance as in the rest of the country, excluding the Paris region. Employment in services continued to grow over the nineties: +16.5 per cent between 1990 and 1999. Between 1996 and 2001 employment in the services sector increased at 2.4 per cent per year; roughly the same rate as the average for the provinces). The wholesale and retail trades employed 18.1 per cent of employees working in the services sector, business services 16.8 per cent and personal services 10.8 per cent (2001).

¹¹ forum.europa.eu

Table 2.2 GDP and employment in Midi-Pyrénées compared to France and Europe (2005)

	Midi-Pyrénées	France	Europe
GDP/capita (euros)	23,003	25,650	23,180
Number in employment	1,077,618	24,859,000	198,661,000
Agriculture	5.9%	4.3%	4.1%
Industry	21.8%	23.8%	28.5%
Services	72.2%	71.9%	66.7%

Source: Agence de développement de la région Midi-Pyrénées, 2006

The traditional bastions of services (wholesale and retail distribution, public and local administration) have been gradually challenged by a new services sector, consisting of business services and personal services. In 1995 market services accounted for 47.7 per cent of the regions value added, and for 49.8 per cent in 2000. This shift has been encouraged by the development around Toulouse of a European technology centre linked to aeronautics and space industry.

As a result, Midi-Pyrénées, already a region of low industrialisation shifted from exploiting traditional resources such as agriculture, textiles and leather and from mining extraction to the development of less material resources ('grey cells', research and innovation). This has created good conditions for the emergence of high-technology industries such as space, aeronautics, electronics, computer activities, telecommunications, biotechnology) (Agence de Développement de la région Midi-Pyrénées, 2006).

- Agribusiness, aerospace and electric and electronic equipment, metallurgy and metal transformation are the four main industry sectors and represent 40 per cent of the industrial added value. The European aerospace complex developed around Airbus represents one of the main regional economic driving forces. It concentrates 13 per cent of the workers employed in the industry sector, (19,000 directly employed), and generated 65,000 jobs in the region. Aerospace also benefits other sectors such as metallurgy and metals transformation (13,000 workers)¹². In 2006 figures rose to 21,000 persons employed directly in the aerospace sector and generated employment, of 75,000, including 67,000 in Haute-Garonne (eAtlasudoe, 2006).
- The manufacture of equipment based on longer established local industry (textile, granite and coke extraction) but also newer local industrial activities employs 12,000 workers. Midi-Pyrénées also has a well-developed and well-structured electronic sector represented by major corporations and a significant number of SMI's. Chemistry, para-chemistry, biotechnologies and pharmacy are among the most dynamic sectors. Traditional sectors such as textile, clothing and leather remain important, but are declining. The growth of the agribusiness sector is higher than at national level. It now employs 23,000 persons, or 15 per cent of the industrial working population of Midi-Pyrénées.

Following this specialisation the Midi-Pyrénées region is the 4th region in France in terms of employment in R&D. It allocates 3.7 per cent of its GDP to research (compared to 2.1 per cent for France and 3.2 per cent for Île-de-France). The region has 400 public laboratories and

¹²www.energie.minefi.gouv.fr

more than 9,000 researchers, of which 5,400 work in the public sector. Major public research institutions are established in the region (CNES, ONERA, CNRS, INRA, INSERM).

The region has the second highest proportion of students, after Île-de-France, in relation to the total number of pupils: 19.2 per cent (i.e. 108,400 students). In terms of student volume Midi-Pyrénées ranks 5th on the national scale. Between 1990 and 2000 the average annual growth rate of the students was roughly the national average at 2.6 per cent. 73 per cent of students were enrolled in universities in 2000-2001. Four universities (Science, Human Sciences, Social Sciences and the National Polytechnic Institute) and ten renowned institutes of higher education establish the reputation of Toulouse for tertiary education. ENSAE, ENSICA and ENAC provide the aeronautics and space sector with their future engineers. Indeed, the region has the second highest proportion of its students enrolled in engineering schools (4.6 per cent)¹³. About 7,600 executives are educated in the 15 engineering schools.

Information and Communications Technology (ICT), as defined by INSEE¹⁴, has experienced the highest growth since the early 1990s, from 25,850 employments in 1990 to 39,000 in 2003. At that time ICT represented 4.2 per cent of wage earners in the region (eAtlasudoe 2006). Growth mainly occurs in computer activities. ICT represent more than 5 per cent of the regional added value. Midi-Pyrénées is the first region in France in terms of job creation in ICT. Demand is mainly driven by the aerospace industry and life sciences.

The cultural industries in Midi-Pyrénées as defined by IAURIF (see section 1) only represent 2.7 per cent of the total wage earners in France and 2.7 per cent of the companies compared to respectively 45.4 per cent and 38.0 per cent in Île-de-France (IAURIF 2006).

Midi-Pyrénées attracts its fair share of tourism. Hotel capacity in terms of bedrooms amounted to nearly 7 per cent of total capacity of metropolitan France and 5.3 per cent of nights in hotels in 2000. The region also accounted for a reasonable share of nights spent in camping sites: 4.6 per cent. The region has the second highest number of 'gîtes' (cottages) for rent: 4,131 in 2000. In 2001 air traffic in the Midi-Pyrénées region ranked fourth on the national scale in terms of passengers and cargo handling. Air traffic amounted to nearly 5,7 million passengers departing and arriving, and freight to 49,900 tons.

2.3 Position in European networks and hierarchy

The European Spatial Planning Observation Network (ESPON) has established a ranking of regions within the EU. This ranking is based on 14 structural indicators based on the Lisbon Strategy (GDP per capita in Purchasing Power Standards/PPS, GDP in PPS per person employed, labour productivity, education attainment (20-24), research and development expenditure, comparative price levels, business investment, employment rate, at risk-of-poverty rate, research and development expenditure, greenhouse gas emissions among others)¹⁵.

¹³ forum.europa.eu.int

¹⁴ NACE sectors included in ICT are 30, 32, 32.1, 32.2, 32.3, 33, 33.2, 33.3, 64, 64.1, 64.2, 72, 72.1, 72.2, 72.3, 72.4, 72.5.

¹⁵forum.europa.eu.int

Table 2.3 Spatial Typologies NUTS level 2 (FR62) for Midi-Pyrénées Région (ESPON, version 2003)

RCE - classified economy	RCE - classified Lisbon performance	RCE - classified labour market	RCE - classified demography	RCE - classified accessibility
3	4	3	3	3

Source: ESPON project 2.4.2 - 1=highly below average; 2=below average; 3=average; 4=above average; 5=highly above average.

According to this analysis, Midi-Pyrénées figures among the most competitive regions in France, together with the northern regions and Central Europe. The region appears competitive with regard to economic indicators, in particular R&D (Table 2.3), but less with regard to social and environmental indicators that place the region at the same level as regions in Romania and Poland. A ranking based on innovation and research has also been made for territories within the ESPON programme. The *département* of Haute-Garonne (whose capital is Toulouse) ranks at a very high level (AUAT, 2006efgh).

Midi-Pyrénées is classified among the ten top ten regions in terms of the proportion of R&D expenditure accounted for by the government sector (0.89 per cent) (ESPON, EU-15, 2001) and in terms of Gross Domestic Expenditure on R&D (GERD) as a proportion of the regional GDP (3.30 per cent) (Table 2.4). Seven German regions are among the top ten regions (Oberbayern spends the most as a proportion of its GDP, at 4.72 per cent). Also in the top ten are the Finnish region of Uusimaa, at 3.6 per cent, and Île-de-France at 3.25 per cent. These comparisons do not include data for the United Kingdom because figures for the UK are not available at this level of detail (they are only available at NUTS 1 level). It should be noted that these comparisons and rankings may be affected by the fact that some 16 per cent of France's R&D spending was not broken down by region in 1996. Other key indicators for Midi-Pyrénées are provided by ESPON (Table 2.5).

Table 2.4 The first ten European regions in terms of Gross domestic Expenditure on Research and Development (GERD) expenditure as a proportion of GDP (EPSON, 1997)

NUTS 2	GERD as a per cent of GDP
D Oberbayern (95)	4.72
D Braunschweig (95)	4.55
D Stuttgart (95)	4.47
D Tübingen (95)	3.98
D Köln (95)	3.61
FIN Uusimaa (95)	3.60
D Berlin (95)	3.36
D Karlsruhe (95)	3.33
F Midi-Pyrénées (96)	3.30
F Île-de-France (96)	3.25

Source: Laafia, 1999

Table 2.5 Other key indicators for Midi-Pyrénées (ESPON)

Indicators	Level for Midi-Pyrénées	General classification of levels
Average yearly development of GDP per capita in PPS in per cent (1995 to 2003)	4 to below 6	To below 2 to 12 and more
Potential accessibility multimodal, 2001 Accessibility index (EU25+2: 100)	80 to below 100	From less than 20 to 180 and more
Information society readiness, growth and impact Information society index	Moderate low	6 levels (from very low to very high)
Employment in cultural and creative professions as a share of active local population, 2005	0: normal values ($x^2+y^2 < 0,752$)	From 0 to 4

Source: ESPON

2.4 Conclusion

Midi-Pyrénées (2,8 million inhabitants in 2006), the largest region in France with a very low density, reached the sixth rank in France in terms of population growth during the period 1990-1999. With more than one million inhabitants the Haute-Garonne *département* is the most populated and has experienced the fastest demographic growth in metropolitan France, fuelled by both natural growth and net migration surplus. The urban area of Toulouse (UAT) dominates the central part of the region, both economically and demographically. Toulouse outnumbers the other towns by far. The region's GDP ranks eighth among the French regions in 2002 and was growing faster than the national average. Midi-Pyrénées, a low industrialised region, shifted from exploiting traditional resources such as agriculture, textile and leather and from mining extraction to the development of less material resources ('grey cells', R&D). Economic development has been characterised by the emergence of high technology industries such as space, aeronautics, electronics, computer activities, telecommunications and biotechnologies. The traditional bastions of services (services industry in the region represents 72 per cent of employment in 2005) have been gradually challenged by a new services sector, consisting of business services and personal services. Following the specialisation in high technology (the European aerospace complex developed around Airbus represents one of the main regional economic driving forces) Midi-Pyrénées is the fourth region in France in terms of employment in R&D. It allocates 3.7 per cent of its GDP to research (compared with 2.1 per cent for France). Major public research and education institutions are established in the region. With over 100,000 students, Midi-Pyrénées ranks fifth at national scale. The region is classified among the top ten regions in Europe in terms of R&D expenditure as a per cent of government sector and in terms of GERD as a proportion of the regional GDP (ESPON ranking). However, while being a dynamic region, Midi-Pyrénées needs to improve its road and rail accessibility, both with Paris (high-speed train projects) and with neighbouring Spain (planned roads and tunnels works).

3 HISTORICAL DEVELOPMENT PATH IN THE METROPOLITAN REGION UP TO 2000

3.1 Time periods

The historical development path described in this section relates to the high technology and knowledge-intensive industries (aeronautics, space, computer industry) that are dominant in the economy of Toulouse.

The description and analysis of path development is based on three concepts:

- *Local productive system* is used as a generic term that encompasses notions such as ‘districts’, ‘technopoles’ or ‘clusters’. It describes systems based on geographic clustering of economic activities of the same kind; on local forms of cooperation; on circulation of knowledge which contributes to innovation or to its spreading within the local system (Grossetti, 2004).
- *Urban innovation system* focuses on the way innovation emerges and circulates within clusters. Urban innovation system focuses on the relationships between universities, research organisations and firms at local level (Grossetti, 1995 and 1999).
- *Local competence system*: the notion is based on the assumption that *local productive systems* are no longer defined according to a product but more and more according to a type of competence - a combination of knowledge, skills and behavior used to improve performance- (Grossetti, Zuliani, Guillaume, 2006). The notion of *local competence system* has been applied to the evolution of high technology activities in Toulouse, but can also apply to productive systems that combine conception and production at intermediary stages within the industrial process (Mecanic Valley: North of Toulouse).

3.1.1 The trajectory of the Toulouse Technopole¹⁶

- ❖ *From early times to the 19th century: The growth of a commercial and administrative centre/ Toulouse misses the Industrial Revolution*

The history of Toulouse can be traced as far back as the 3rd century BC, according to the oldest archaeological evidence of permanent human settlement (settlements established by a Celtic tribe named Volques Tectosages). Toulouse was located at an easy crossing of the Garonne River. It was a focal point for trade between the Pyrénées, the Mediterranean and the Atlantic. The city was founded by the Gallo-Romans between 10 BC and 10 AD. Later on, Toulouse grew to be a middle-sized city in Roman Gaul. By 500, the Visigothic Kingdom,

¹⁶ Text based on the work of M. Grossetti and J.M. Zuliani. Edited by E. Peyroux and D. Eckert.

centred around Toulouse, controlled Aquitania and Gallia Narbonensis and most of Hispania. During the early Middle Ages, the city became the capital of the 'County of Toulouse', which was ruled by the same dynasty between 849 and 1271. Toulouse was the seat of one of the most beautiful courts of Europe, where a civilisation of refinement and great influence developed (the literature of the Langue d'Oc, the troubadors, etc.).

In the 12th century, a great number of local lords and prominent people joined the religious movement of the Good People (later known as Cathars). A crusade (1209-1229) was initiated by the Roman Catholic Church to eliminate the heresy. As a result, the count of Toulouse signed a treaty with the representatives of King Louis IX (1229) and the region was kept firmly under the control of the King of France. The Inquisition was established in Toulouse in the same year 1229, and a theological University founded. This university became rapidly the second French university after the Sorbonne.

Made a royal city in 1271, Toulouse experienced rapid economic growth. In the 15th century the medieval city enjoyed a period of prosperity thanks to the pastel, a plant-derived blue dye that was exported throughout the world. The red brick mansions constructed by the rich merchants, which gave Toulouse its name of 'The Pink City', date back to this period of time. In the middle of the 16th century, a less expensive dye, indigo, arrived from America and pastel trade declined. At that time France was torn apart by a religious civil war between Catholics and Calvinists. Toulouse remained a Roman Catholic city.

In the 17th and 18th centuries, the main regional production was wheat. The major achievement of that period is the building of the 240 km long *Canal du Midi* (1662-1681), which runs from the city of Toulouse down to the Mediterranean port of Sète. The French revolution of 1789, which saw the fall of the monarchy (1792), marked the end of the Capitouls' reign. The first mayor of Toulouse was elected.

In the following period the economy of Toulouse entered a declining phase. Rural estates belonging to the local bourgeoisie did not generate enough income and the Industrial Revolution did not really take off. Once a major metropolis of Western Europe, Toulouse therefore sank to a sleepy regional-level status (1801: 52,000 inhabitants, 150,000 in 1911). Toulouse was a commercial and administrative centre with no heavy industries except chemistry. The city was left out of the major accumulation processes that occurred in industrial cities such as Lyon, in seaport and trading cities such as Marseille or Nantes, or in a wine region such as Bordeaux.

❖ *From the early 20th century to the 1950s: A development driven by education and research and an early specialisation in electricity and aeronautics*

The early 20th century was characterized by a huge population increase, caused by the arrival of immigrants (immigrants came from the north of France in 1914, from Italy in the 1920s and Spain in the 1930s). Toulouse experienced its own industrial revolution, with the development of chemical industries in 1915 and the Latécoère aircraft factory.

The specialisation of Toulouse in the fields of higher education and research dates back to the early 19th century. Between 1808 and 1870, faculties were created in few cities (including Toulouse) outside Paris.

The establishment of the Third Republic (1870) brought the complete renovation of the French higher education system. The relative autonomy given to the faculties and to local actors resulted in a strong differentiation between scientific poles. In Toulouse both teaching and research first specialised in electricity. Political decisions played a key role in this specialisation whereas in Grenoble, for instance, industrial concerns played a leading role in developing science-based industry. Politicians and academics played with the idea that industrialisation in Toulouse would benefit from the proximity of the Pyrénées. But the dream of an industrial development based on hydroelectricity never came about. In addition to electricity a specialisation in chemical engineering emerged in Toulouse in 1906 (Chemical Institute) mostly due to the influence of Paul Sabatier (Nobel Prize 1912, Chemistry), then developed from 1949 onwards (creation of the Institute for Chemical Engineering).

The aeronautics industry emerged during the First World War (1917) under the leadership of a wagon manufacturer, Latécoère. But this early aeronautic industry hardly had any links with the faculty of Sciences. At that time aeronautics was not a high-tech industry. While Toulouse had a cutting edge scientific system there was no link (such as existed for example in Grenoble) between research and industry, until the 1960s.

❖ *1950-1975: Toulouse benefits from State decentralisation/The State bets on Toulouse*

The period following World War 2 saw the emergence of a scientific research pole and the growth of aeronautics and space industry.

- The first development was in Automatics. The Laboratory for Electrical Engineering of Toulouse (1955), which laid the grounds for the future LAAS (1967) or Laboratory for Automatics and System Analyses was created.
- The emergence of computer industry in Toulouse is strongly linked with the establishment of public education and research institutions which specialised in numerical calculation (ENSEEIH from 1958). A university centre for calculation was also established in 1957 (Grossetti, 1990 and 1993).
- Major change occurred in Toulouse with the decentralisation of aeronautical and spatial activities at the end of the 1950s. The policy of the State aimed at strengthening aeronautical activities through the decentralisation of several education institutions that specialised in engineering and research.

Decentralisation of spatial activities had a great impact on the local economy in Toulouse. For the first time since 1907 local industry in Toulouse was able to benefit from the scientific environment that the local authority succeeded in building up over time.

The transfer of CNES (National Centre for Spatial Studies) to Toulouse was one of the three causes of a strong bifurcation, being the first industry to connect with the local research and higher education system.

- The CNES was not only a research centre but also an industrial agency in charge of developing the national spatial industry. The CNES used to work with firms that settled later in Toulouse (Matra in 1979, Alcatel in 1982). It grew up by hiring a large number of local graduates and quickly connected with local laboratories.
- The second cause of bifurcation was the shifting, of the aircraft industry from electromechanical technology to digital technology (Airbus A320 programme¹⁷).
- The establishment of a Motorola¹⁸ factory and the development R&D activities in Toulouse in 1967 represent the third cause of bifurcation.

In the 1960s a major change also occurred in the local higher education system. A local branch of the national Office for Aeronautical Studies and Research was created (ONERA) along with an INSA (National Institute for Applied Sciences). The National School of Civil Aviation, founded near Paris in 1948, was transferred to Toulouse in 1968, as well as the ENSAE, (National Higher School of Aeronautics) and ENSICA (National Higher School for Aeronautical Engineering), which was created in Paris in 1945 and transferred to Toulouse in 1961. Within a few years a new local innovation system was born (Grossetti, 2006).

❖ *1975-1999: Enhanced cooperation between firms and the rise of high technology*

After 1982, the government supported cooperation between firms and academic research. In Toulouse, several spin-offs from laboratories were created (in software engineering and biotechnology among others). The local market for engineers became extremely dynamic. In computer industry (Scott, Zuliani, 2006), the rise of high-tech industries progressively fed the development of service firms (in particular software engineering, information storage, artificial intelligence, communication). This evolution was based on the recruiting of a local highly qualified workforce.

The decentralisation of Météo France in 1982 led to a growing demand for calculation infrastructures and services. The progressive establishment of firms specialised in integration, assemblage and test of satellite decks (Alcatel, Matra Marconi Space¹⁹), and the national satellites programmes (SPOT, Argos), gave birth to associated firms such as SPOT Image and CLS Argos (Zuliani 1991). The rise of service firms was also boosted by the needs of the aeronautical and spatial industry; this industry developed links with public research and engineering schools.

Since 2000-2001 the space sector experienced a crisis linked to the reduction in the number of satellites assembled by Astrium (formerly Matra Marconi Space) and Alcatel. Whilst aeronautics remains the driving force behind computer industry development in Toulouse, other scientific and industrial sectors such as Meteorology (Météo France) are currently

¹⁷ The Airbus A320 is the basis for a whole family of airliners, now including the A318, A319 and A321. The A320 was designed with a maximum of new technology incorporated, like Fly-by wire control system, first in subsonic airliners.

¹⁸ Originally founded as the Galvin Manufacturing Corporation in 1928, Motorola is a leading company in wireless, broadband and automotive communications technologies and embedded electronic products.

¹⁹ Matra Marconi Space was established in 1990 as a joint venture between the space and telecommunication divisions of the Lagardère Group (Matra Espace) and the GEC group (Marconi Space System).

exerting influence. There has been a mutualisation of activities through the creation of a resource and service centre in scientific calculation (CERFACS).

❖ *Preliminary conclusion on the historical development path of Toulouse as 'technopole'*

Due to an early specialisation in science-based industry and the development of aeronautics in the 1950s Toulouse is neither in search of new activities nor of a shift in economic specialisation but rather in a cumulative process of capitalising and building up on its technical and human capital assets. There is no search for a new economic profile, except in the sector of biotechnology and health, which it is hoped will replace chemical industries. In this respect, Toulouse does not have to 'reinvent itself'.

Economic specialisation in high technology (aeronautics, space sector, computer industry) has been largely driven by public policies implemented at different levels. The strong economic development of recent decades is in part due to the decentralisation of many sectors, such as meteorology, civil aviation, space activities. The relations between science, research and industry have played a key role in the economic development although the interrelations between these sectors started relatively late (in the 1960s).

Apart from the region of Paris, Grenoble and Toulouse are the most important urban innovation systems in France. Grenoble and Toulouse are by far the leading provincial urban areas for cooperation between universities or research organisations and firms (Grossetti, 1995; secondary analysis of data from Mustar, 1995).

The UAT doubled its population between 1960 and 2000. With good prospects for aerospace and biotechnology industries, growth is likely to continue in the near future. Toulouse is thus recovering step by step its former rank as a major European metropolis. Toulouse has theoretically good points of departure for creative knowledge city strategies.

3.1.2 *Toulouse: A short history of fine arts*²⁰

The history of fine arts is presented as a typical example of the historical development path of the cultural sector in Toulouse, a witness of the shift from academic provincialism to modernity and internationalized life that has characterized artistic activities in the city during the 20th century.

❖ *1900-1945: The sleeping beauty*

A regional capital city of art with 'antennas' in Paris: In the early 20th century Toulouse was an lively city. Its Fine Arts school and its social circles attracted artists from Southern France. Toulouse was able to grant scholarship to study Fine Arts in Paris. Well-known artists from Toulouse (Constant, Debat-Ponsan, Falguière, Marqueste) settled in Paris but remained

²⁰ Original text written by M. Azam, abridged by D. Eckert, final version revised by M. Azam.

active in local networks. They also worked locally for public authorities (the notorious ‘*Illustres Room*’ in the Capitole was decorated by local-born artists paid by the municipalities). Through this local work requested and financed by the political authorities there was an opportunity to assert a local identity and singularity. At that time academicism was dominant in art produced in Toulouse.

A retreat into local and regional identity: When this generation of artists was gone new masters, whose reputation was only local, took over and the former brightness city faded until World War II. The notion of a southern (‘meridional’) tradition and specificity was put forward in the discourse, as shown by the contribution of Toulouse to the 1937 Universal Exhibition. This period was characterised by inertia.

❖ *1945-1970: A new start/a period of ‘cracks and quivering’*

A desire for modernity: From the 1950s onwards debates around abstraction and representation eventually gained preeminence in Toulouse. A new generation of artists and art lovers organised events that competed with traditional regional social activities. At the same time several art galleries were opened and demonstrated the emergence of a private sector in the regional capital. But tradition remained strong: the new State policy launched by Malraux, the Ministry for Cultural Affairs, in 1959 had limited impacts on plastic arts in the region of Toulouse.

May 68 and regional claims: May 68 was synonymous with crisis for the fine art school. Teaching was highly contested, in particular by architects. Provincial academic art was strongly criticised at a time where local art initiatives were booming in France (through artists associations and networks) and wanted to set the idea of provincial innovation, rooted in modernity. Major events took place in the 1970s and the 1980s, such as the *Mostra del Larzac* in the neighbouring department of Aveyron. Regional art life dispersed: significant modern exhibition places emerged outside Toulouse (Tarbes, Beaulieu). Individuals or groups that wanted to make their actions last launched these initiatives - not local authorities. It is still too early to say that a regional contemporary art built up but a delegitimation process of traditional art had started.

❖ *1980-2000: Devolution to local institutions and a new deal*

The impacts of institutional devolution and decentralisation in the 1980s: Institutions established by the left-wing government working under the Mitterrand presidency largely leaned upon networks built up in the 1970s. The announcement of decentralisation policies generated a local boom in the associative milieu: art galleries and art events as well as art journals (Axe Sud, Pictura Edelweiss) were about to play a significant role. Yet the State, which created institutions in the regions (CRAC, FRAC, DRAC), did not delegate cultural functions to them. This generated more of a devolution process than a decentralisation process.

State services act as driving forces in artistic life: Corporate patronage remained limited. The role of the Ministry for Cultural Affairs and the regional institutions was therefore essential -

by providing funding but also by legitimating projects. Local authorities needed the approval of the State before implementing a project (such as the Art Centre *Cimaise and Portique* in Albi for instance).

The Toulouse art scene becomes more visible: In the 1980s many exhibitions were organised in Paris, that allowed regional artists to be promoted. Groups of artists from Toulouse had the opportunity to gather and be seen in the capital city. At the same time leading critics from Paris accepted coming to the 'Pink City'. Private art galleries also grew in numbers (18 galleries in the region in 1982). Among them galleries of the 'advanced' sector could not survive without institutional support. Public support included buying artwork and co-financing exhibitions or catalogues.

Towards a bigger perspective: There was increasing support to external artist residency programmes and artists, in particular from the Mediterranean region, were hosted in Toulouse. Acquisitions funds were made available to foreign personalities. The three FRACs of the Greater South-West region organised exhibitions in Spain. The Fine Arts school, now dedicated to contemporary art, kept its status as the key education venue. In the early 1990s an applied and plastic art section opened at the University of Toulouse-Le-Mirail. The opening, in 2000, of the Museum *Les Abattoirs*, which brought together assignments from FRAC and CRAC that were previously kept outside Toulouse, was also a major event.

The effects of the 1990s crisis: The art market declined all over France in the 1990s and galleries of the 'advanced sectors' particularly suffered from this situation. Only two or three survived. The more recent revival of commercial activities is mainly due to current economic and demographic growth in Toulouse.

Towards stabilisation? From boom to stabilisation: It seems that private and institutional stakeholders have now reached a stable configuration. 'Traditional' art galleries coexist with 'advanced' galleries, in particular within the network *Art Contemporain*.

The affirmation of the regional capital: In recent years the regional capital has taken its own initiatives: the Museum *Les Abattoirs* (modern and contemporary art) was opened; the festival *Printemps de Cahors* (held in the Lot *département*) was transferred to Toulouse and was turned into *Printemps de Septembre*. State subsidies for plastic art remained constant and demonstrated State support. Local authorities are more and more involved in this sector. Under the leadership of the State, contemporary art has now supplanted traditional art in terms of legitimacy. Local authorities are invited to be more involved in art but their representatives have few qualifications in the field. Their actions also have to be approved by a local population that demonstrates little interest in art. For all these reasons their support for innovative art expressions remains limited. Art events organised in Toulouse now enjoy high visibility and attract steadily increasing audiences. But what we are witnessing is more the diffusion of an international art that attracts media attention than the valorisation of local creation. Artists from the advanced sectors are still leaving the region.

3.2 Trajectories

3.2.1 Population structure

Population in the UAT has grown significantly between 1990 and 1999. Toulouse now ranks 5th among the urban areas in France in terms of population after Paris, Lyon, Marseille-Aix-en-Provence and Lille (4th when only considering the city of Toulouse). About 120,000 new inhabitants have come to live in the urban area since 1990. With an annual growth rate of 1.6 per cent between 1990 and 1999 Toulouse is one of the most dynamic urban areas in France (Table 3.1 and Figures 3.1 and 3.2).

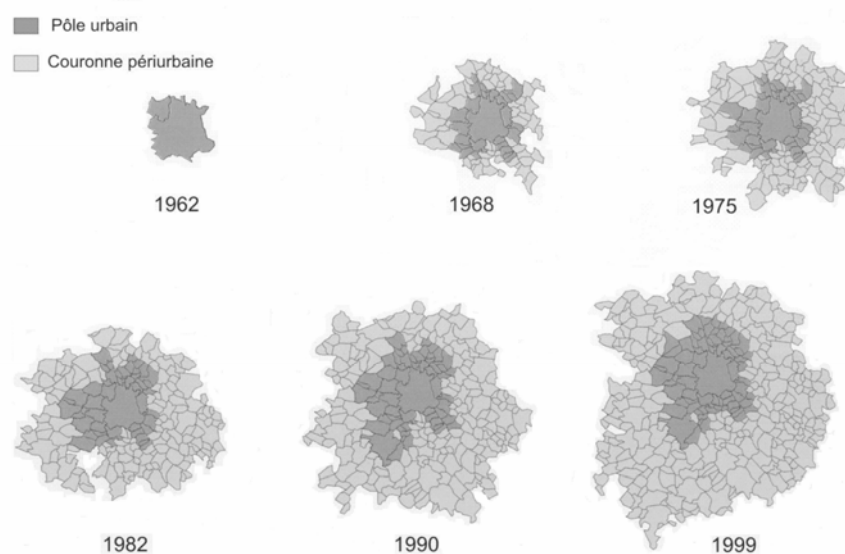
Table 3.1 Total population and growth rate every 5-10 years in the UAT (1999)

	Total population		Annual growth rate (per cent)		
	1990	1999	2004	1990-1999	1999-2004
Urban pole	666,941	761,090	831,000	1.57	1.67
Periurban ring	174,211	203,707	229,000	1.61	2.23
Urban area	841,152	964,797	1,060,000	1.42	1.79

Source: INSEE National Census, 1999

Urban population growth results from natural increase linked to the age profile of the urban population (33 per cent of the population are between 20 and 40 years of age, but only 23 per cent are less than 20 years of age) and net migration, which reflects Toulouse's attractiveness. The population is however ageing following a national trend: there is a growth of population in the 45-54 and 70-79 age categories (Table 3.2A in appendix).

Figure 3.1 Evolution of the perimeter of the UAT (1962-1999)



1962: 2 communes, 329,044 inhab.

1975: 152 communes, 584,661 inhab.

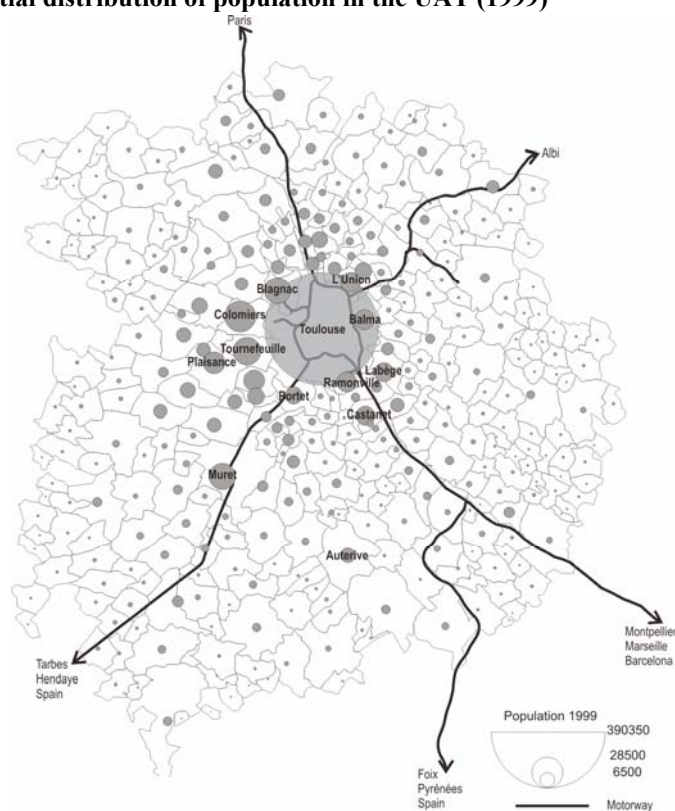
1990: 255 communes, 797,373 inhab.

1968: 90 communes, 474,209 inhab.

1982: 195 communes, 644,089 inhab.

1999: 342 communes, 964,797 inhab.

Source: INSEE, AUAT, 2002

Figure 3.2 Spatial distribution of population in the UAT (1999)

Source: INSEE, National Census, 1999. Conception: F. Desbordes

11 per cent of foreigners live in the UAT (this includes non-nationals and naturalised French). Among new residents coming from outside Toulouse 20 per cent come from the urban area of Paris, 48 per cent come from other urban areas in France, 22 per cent from rural areas and 11.6 per cent are foreigners (45 per cent from Europe, 26 per cent from Maghreb, 13 per cent from Africa and 17 per cent from other foreign countries (AUAT 2006e) (Table 3.3A, 3.4A and 3.5A in appendix). Migration from Northern Europe is noticeable among high skilled workers.

The population of the UAT has a high level of education compared with other urban areas: 26 per cent of the population aged above 15 have completed degrees in higher education (Table 3.6A and 3.7A in appendix). The share of highly qualified occupations and intermediate occupations has been increasing, while the share of workers and employees has declined.

Toulouse is among the urban areas in France that has the highest household incomes. In 2001 half of the inhabitants belonged to a household which earns more than €16,129 per year (the median regional income is 14,000) (AUAT-INSEE, 2005a). The median disposable annual household income in the UAT was €15,286 in 2001 (Urban Audit).

Disparities between incomes are sharper than elsewhere in the country, in particular within the city-centre as opposed to the suburbs and periurban areas.

Household structures have evolved in the 1980s with an increase of one-parent families (13.1 per cent in 1999), almost half of couples without children (42.6 per cent) and a slight increase in large families (7.3 per cent with at least 3 children) (INSEE-AUAT, 2002b).

3.2.2 Economic structure

The distribution of working population at workplace shows that services are dominant (77.3 per cent of the working population) compared with industry (21 per cent) and agriculture (1.7 per cent). The main sectors of activity are real estate, renting and business activities (14.4 per cent), manufacturing (14.3 per cent), wholesale and retail trade (13.7 per cent) and health and social work (12.4 per cent) (Table 3.8, see also detailed Table 3.9A in appendix).

In terms of employment, economic activity in Toulouse relies on four main sectors: aeronautics (15,000 jobs), space (6,000 jobs), electronic (5,000 jobs) and chemistry-pharmacy-biotechnology (3,000 jobs) (figures for 1999). A large number of sub-contractors are linked to these main activities and account for about 4,000 jobs. Recently there has been a growth in business services, in particular in ICT sectors (computer industry and engineering). The unemployment rate was 13.9 per cent in the UAT in 1999 (11.3 per cent for men and 16.8 per cent for women).

Data on the working population according to sectors and sex are presented in Table 3.10A in the appendix. See also Table 3.11A in appendix for the distribution of working force based on ISCO-88 classification, Tables 3.12A and 3.13A for indicators of full-time and part-time work and Table 3.14A for labour force participation and unemployment rate.

Toulouse is composed of 6 clusters of activity: the administrative, financial, cultural and touristic cluster around the inner city; electronic and computer cluster in the western part of the urban area (Mirail, Basso-Cambo); chemical industry in the south-west; industry and space research around the city of Toulouse and neighbouring towns; aeronautics in the west (Colomiers, Blagnac); agribusiness in the south (Agropole).

Table 3.8 Working population according to the main sectors of activity in the UAT (1999)

NACE codes	SECTORS	Number of employed persons	Per cent of working population
<u>A</u> , B, C	Agriculture, hunting and forestry, Fishing, Mining and quarrying	6,674	1.7
Total agriculture, hunting, forestry and fishing (A+B+C):			1.7
<u>D</u>	Manufacturing	57,445	14.3
<u>E</u>	Electricity, gas and water supply	3,735	0.9
<u>F</u>	Construction	23,169	5.8
Total industry (D+E+F)			21
<u>G</u>	Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods	54,733	13.7
<u>H</u>	Hotels and restaurants	14,210	3.5

<u>I</u>	Transport, storage and communications	29,425	7.3
<u>J</u>	Financial intermediation	9,684	2.4
<u>K</u>	Real estate, renting and business activities	57,557	14.4
<u>L</u>	Public administration and defence; compulsory social security	40,196	10.0
<u>M</u>	Education	32,307	8.1
<u>N</u>	Health and social work	49,639	12.4
<u>O</u>	Other community, social and personal service activities	17,138	4.3
<u>P</u>	Activities of private households as employers and undifferentiated production activities of private households	4,472	1.1
<u>Q</u>	Extraterritorial organisations and bodies	91	0.0
	Total services (G+H+...+Q)		77.3
Total		400,475	100

Source: INSEE, National Census 1999, *Working population at workplace*

The UAT had 12.0 per cent of higher metropolitan employment in 1999 compared with 10.4 per cent in 1990 (this includes art, banking and insurance, research, trade, commercial in industry, management, business services, telecommunications, transport, computer industry and information). This is one of the highest proportions in France after Paris (16.0 per cent) and Grenoble (12.7 per cent). Toulouse was included among areas classified as ‘particular urban areas’ in the ranking in France because of its high specialisation in research activities (INSEE, 2003) (29.8 per cent).

3.2.3 Governance/policies

❖ *The slow path towards inter-communal organisation*²¹

- The resistance phase of the 1960s and the 1970s

Tracing the history of local administration in Toulouse shows the affirmation of strong municipal authorities and a long-term opposition to inter-communal schemes initiated by the State as early as the 1960s. Whereas other urban areas in France adopted inter-communal structures Toulouse stood aside from such top-down institutional processes. Weak demographic growth in the 1960s (the agglomeration of Toulouse only had two municipalities and 330,000 inhabitants in 1962) and the massive importance of the central city (323,000 inhabitants in Toulouse, 5,000 in Blagnac) can explain why inter-communal structuring was not seen as a primary necessity. There was also little incentive for the State to push towards inter-communality as there were few large municipalities in the peripheral areas. All attempts to set up inter-communal schemes in the 1960s met opposition from mayors, either based on the rejection of a project that would give too much power to Toulouse over the peripheral municipalities, or based on the dismissal of a technocratic scheme imposed by the State.

An urban agency was only set up in 1972. The objectives were to stir up collective discussion about the ‘idea of agglomeration’ and help to set up a structure. But this was a failure and no

²¹ This section is based on the article of M.-C. Jaillet and Ph. Estèbe (1999).

inter-communal scheme could be established due to the constant opposition of the mayors. The slow adoption of the first master plan of the Toulouse agglomeration was an illustration of the ‘municipal conspiracy’. It took ten years to have the master plan adopted and published and it was amended as early as in 1984. Whereas mayors were opposed to State and technocratic initiatives that aimed to rationalise management they did develop forms of inter-communal cooperation in the sanitation, water, electricity or transport sectors. As a result there were 70 inter-communal syndicates (SIVU or SIVUM) operating within the perimeter of the master plan.

The issue of inter-communal organisation fed numerous political debates in the 1970s and focused on the relationships between the centre and peripheral areas. ‘To be for or against the central city’ was the only question raised. For the mayor of Toulouse inter-communal structures would reduce competition between the peripheral municipalities that was detrimental to the central city. For the mayors of the peripheral areas it would limit the hold of the central city and therefore allow peripheral areas to benefit from economic development. Whereas Toulouse dominated the urban territory during the 1960s there was an inversion of trends in the 1970s, with Toulouse losing inhabitants between 1975 and the peripheries enjoying demographic growth. Competition increased between a declining centre and growing peripheries, which not only wanted to accommodate new inhabitants but also to host new activities and benefit from related wealth. In the 1970s the only important event was the creation of the SICOVAL (*Syndicat Intercommunal pour l'Aménagement et le Développement des Côteaux et de la Vallée de l'Hers*) joining four, then six small-size municipalities. This was the first inter-communal structure to engage in town planning and economic development. This structure only gained weight in the 1980s. Despite the lack of inter-communal structures during the 1960s and 1970s informal political regulation emerged and paved the way for the local compromise that was shaped in the 1980s, in a context of major political change.

- 1982-1992: The emergence and structuring of governance in the Toulouse agglomeration

Two factors played a key role in the changing conditions of the 1980s: firstly, the debate went beyond the opposition between the centre and peripheral areas, and secondly, the State shifted position with regard to local authorities. In the 1980s a process of metropolitan growth occurred in a context of demographic growth and this benefited most the peripheral areas without this being to the detriment of the central city which also grew. The significance of peripheral areas could not be contested any longer especially when economic activities were ‘moving out’ of Toulouse (see section on social polarisation). In addition to the central-periphery model there was a spatial distribution of social and economic functions in the whole agglomeration. This process was initiated in the late 1970s with the setting up of hypermarkets. A functional division of space at the scale of the agglomeration developed and was reinforced in the 1990s. There was a twofold process of complementarity and competition between municipalities. In the meantime political power shifted from left to right wing parties in Toulouse. Left-wing politicians were looking for a compromise with the central city. Peripheral areas, which used to be under the umbrella of the general council of the Haute-Garonne Département, were willing to break away from this tutelage and get closer to the central city.

From 1987 onwards there was a booming of inter-communal structures. Whereas existing inter-communal syndicates were based on departmental territorial divisions (*cantons*) inter-communal schemes were based on different territorial bases depending on agreements between mayors. New inter-communal structures included one syndicate for the technopole composed of Toulouse and six other communes and the SICOVAL. An association was formed with municipalities located in the south-western part of the agglomeration (association 632). The same occurred with the municipalities in the north, and the association was later turned into a Community of Communes. Another syndicate in charge of economic development was set up as well as various inter-communal business zones.

The new terms of the debate was also linked to the new position of the State. Moving beyond the traditional oscillation between decentralisation and recentralisation the State aimed at developing new relationships with local authorities. While the central institution still defines the rules of the game and formulates strategic orientations (on solidarity, development) it allows a public process to develop in which debate with local elected officials can take place. The setting up of consultation and discussion committees within the framework of the Contract for the City (see section on urban renewal policies) and within the process of the revision of the master plan is a relevant example of revised practices.

- A juxtaposition of institutional and management perimeters

As a result, there was a juxtaposition of various inter-municipal schemes that reflect the social and economic geography of the agglomeration in the early 1990s:

- Old existing inter-communal structures dealing with technical issues (sanitation, electricity, transport).
- Consolidated municipal blocs structuring the agglomeration in four quarters: the District of Greater Toulouse, which included the central city, the wealthiest and most industrialised communes; the SICOVAL in the southeast (which became Community of Cities in 1983) centred around a dynamic commercial and technological park and including residential towns, with an over-representation of engineers, technicians, executives and independent professionals; the syndicate SYNERGIE in the south dedicated to hypermarkets and logistic; the Community of Communes from the North (SIDENE) with communes seeking to become integrated into the economy of the agglomeration.
- The progressive and difficult emergence of a Conference of the Mayors in which the State was acting as mediator.

This compromise regarding institutional and management perimeters allows the setting up of a unique agglomeration structure in Toulouse to be put aside. The term that best fits this political arrangement is the one of *governance* rather than the one of *government*. Within this arrangement the municipality does not disappear as local power and local elected officials keep their political responsibilities. Regulatory mechanisms between the various blocs are operating at the scale of the agglomeration. This arrangement might be less efficient than a single structure of Urban Community as developed in other large urban areas in France (such as Bordeaux). Whereas problems of social and spatial exclusion can not be denied, one could wonder how and to what extent the Toulouse system might suggest the way to go beyond the

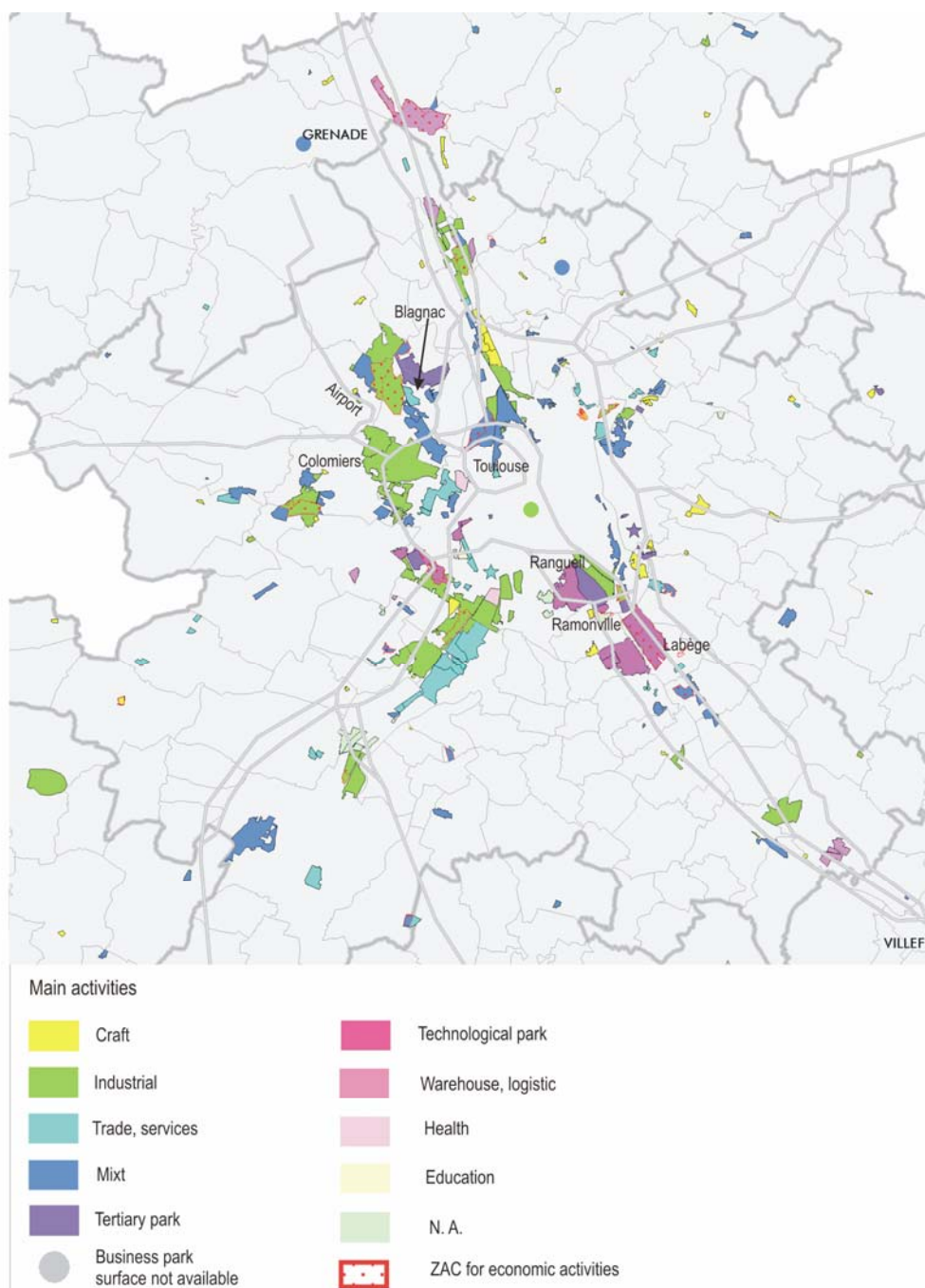
classical alternatives presented by proponents of a major restructuring scheme (a *gargantuesque* one) and proponents of public choice.

During this period of time different planning and management instruments were being implemented with no single and coherent vision of the whole urban area²². Yet this complex institutional situation did not affect the attractiveness of the urban area, which remained one of the most dynamic in France in terms of demographic growth. National decisions taken over recent decades with regard to key services, delocalisation and support to aeronautics and the space sector explain this attractiveness. One should also stress the capacity of local stakeholders to react to national incentives and provide the conditions for accommodating new economic activities (the assembly line for the A 380 is a relevant example of such a local adaptability). The hypothesis of an endogenous capacity (or creativity?) to mobilise stakeholders and meet challenges can therefore be formulated. Despite a certain institutional fragmentation the UAT shows that a ‘dialogue between agglomerations’ (Jaillet, Estèbe, 1999) exists and allows stakeholders to grasp opportunities.

❖ *Local economic development policies*

Toulouse as a technopole is an exemplary case of State driven regional development being simultaneously based on growth of localised and non-hierarchical dynamics (Scott, Zuliani, 2006). Economic development has been driven by a plurality of stakeholders whose number increased with the decentralisation policy. The State has played a dominant role. Toulouse has benefited from the decentralisation policies implemented by the State from the 1960s onwards to balance territorial inequalities at national scale (see ‘Toulouse balancing metropolis’ in section 1): 70 per cent of activities created in the agglomeration of Toulouse during the 1960s were initiated by the State and derived directly or indirectly from its authority (Jaillet, Estèbe, 1999).

²² Text written by J.L. Coll, translated by E. Peyroux.

Figure 3.3 Location of industrial and business parks in the UAT (2006)

Source: AUAT, 2006

Local authorities and inter-communal structures also played a role in local policies. As there were now examples of single management and regulation for the agglomeration of Toulouse, economic development and urbanisation depended upon individual decisions, land opportunities, and attractive municipal policies (Sibertin-Blanc, 1999). Over the past 20 years Toulouse and the municipalities of the suburbs have used business taxes to develop business and technological parks (Figures 3.3). There has been a strong competition between municipalities, but also major disparities between, on the one hand municipalities that accommodated industrial and commercial activities and had affluent residents, and on the

other hand municipalities with only residential functions (dormitory cities), which had few tax resources and had to deal with growing social issues.

Policies implemented by inter-communal structures include the following:

- The District of the Greater Toulouse created in 1992 had duties in relation to housing and the fire brigade. It also took over powers in the field of economic development, water, sanitation, coordination of urban policies, environment, road traffic and delinquency. But actions in these fields were minimalist (Sibertin-Blanc, 1999).
- The SICOVAL was created in 1975 with the aim of developing a technological park near the university of sciences (Labège Technopole). In 1999 this park hosted 6,500 jobs, large firms, SMEs and SMIs and business services. In 1989 the SICOVAL was transformed into a syndicate, then turned into a Community of Communes in 1992. Its competencies included town planning (inter-communal infrastructures, public roads), economic development, protection and valorisation of environment and housing policies. Revenues were based on a single business tax. There was a political will to control urbanisation and deal with all associated problems.

Other stakeholders include the Midi-Pyrénées region (see section 6).

Private stakeholders were also active in policies. Executives from big companies and researchers from large laboratories used their professional networks to launch industrial companies. Whether they were born in Toulouse or not they have chosen Toulouse because of its assets as a university centre and because of the rapid growth of high technology industries. The big companies, which at that time were subjected to employment retrenchment, welcomed this expansion. They favoured the development of SMEs rather than the creation of new internal jobs. The passage from public to private employment was facilitated by administrative procedures, encouraging researchers to join the private sector.

❖ *City policies*²³

The city of Toulouse has a long history of urban policies. It was even acknowledged as setting an example for the rest of France (Jaillet, 2000; Jaillet, 2005) as it implemented all proposed schemes early and very quickly. This included initial actions on Social Life and Housing (HVS) to upgrade social housing schemes as early as the late 1970s (Bagatelle, then Tabar, Madrid and Izards).

In the early 1980s Toulouse implemented experimental schemes in partnership with the State (Social Development Areas, DSQ), and aimed at addressing all social issues within the neighbourhood. Empalot, Reynerie and Bellefontaine benefited from this agreement between the State and the local authorities. This procedure was based on five structuring principles: territorialisation, transversality, project management, contractualisation and participation of the residents. Initiated on 22 sites in France the scheme was later generalised to 400 neighbourhoods. This five-year agreement between State, local authorities and regions aimed at preventing social, economic and physical degradation of the neighbourhoods. In 1992 there was a shift in the scale of interventions. A City Agreement (*Contrat de Ville*) was signed in

²³ Text written by C. Thouzellier and translated by E. Peyroux/

the agglomeration of Toulouse to address socio-spatial exclusion (City Agreements had been established at national level in 1989).

At the national scale a Minister for the City was nominated in 1990 and sub-prefectures were given competences, in particular in coordinating local city policy. Two laws were adopted and demonstrated the will to address structural factors: the law on Financial Solidarity created the Endowment for Urban Solidarities (DSU), which allowed a principle of solidarity to be set up between wealthy and poor municipalities; the Law on the City (LOV) set up a principle of 'social mixity' and a requirement regarding the share of social housing in a municipal area (at least 20 per cent of 'housing at moderate rents', HLM).

But it proved difficult to establish the principle of solidarity between municipalities within the same agglomeration. The City Policy reverted to a more territorialised vision with the creation of a new procedure on a limited numbers of sites (13 in 1994): the Great Urban Project (GPU). In 1995 J. Chirac launched at the national scale a Marshall Plan that translated into a New Plan for the City. 'Urban Free Zones' were to be developed in the most deprived areas (44), followed by 'Urban Renewal Zones' (372) and 'Sensible Urban Zones' (334). All zones would benefit from the progressive decrease of taxes.

3.2.4 *Social polarisation*²⁴

The social division of labour and the labour market have shaped the socio-spatial geography of the urban area. At the end of the 1970s firms have shifted a number of activities from the centre to peripheral areas: management and research functions, commercialisation and storage units, and later on manufacturing activities moved to the periurban areas (Siino, 1998). These deconcentration processes took place along the national road with the northern part being dominated by the wholesale trade, while large shopping centres developed in the south. At the same time, in the context of national decentralisation and devolution policies, both public scientific and industrial activities and major economic activities were settled at the borders of the municipality of Toulouse with a scientific complex in Rangueil and mechanical and electronic industries in Le Mirail. Other activities were settled in neighbouring municipalities: space and aeronautics industries in the west around Blagnac and Colomiers and in the southeast around Labège and Ramonville (Figure 3.3). These newly established activities stimulated demand for improved land in nearby areas and led to the emergence of SMEs and SMIs. This in turn contributed to the creation of highly qualified jobs in the computer industry, electronics and management and consulting services.

These specialised 'Centres of excellence' associated with major urban renewal projects have shaped differentiation between sectors and between centre and periphery. Between 1980 and 2000 there has been a noticeable accentuation of professional specialisation of the population at various scales.

As a result of such a socio-spatial division of labour the distribution of socio-professional categories in the Toulouse agglomeration is based on the following 6 sectors:

²⁴ Text based on C. Siino's work, written by C. Thouzellier and translated by E. Peyroux.

- The central city is characterised by high socio-professional status, in particular in the centre, and a concentration of low-income population in some peripheral areas. The proportion with a higher professional status is increasing.
- In the northern peripheries the share of workers and intermediate professionals is increasing. During the period 1990-1999, while the number of municipalities increased in the agglomeration, this social residential profile persisted.
- In the northeastern part of the agglomeration there is a large share of executives working in the technopole zones located in the southeast.
- In the southeastern part there is a growth of highly qualified executives and intellectual professionals and a decrease of other socio-professional groups
- In the south-western part there are mainly employees and workers. These areas attract few higher socio-professional groups.
- The northwestern part is a heterogeneous area. Higher socio-professional groups are dominant while all other categories are decreasing. Two municipalities with the highest share of social housing besides Toulouse are located there (Colomiers et Blagnac) (see also section 4).

3.2.5 Physical infrastructure/layout of the city

The UAT is organised around nearly concentric zones:

- The *old roman city* characterised by narrow streets, which have almost remained intact since the Middle-Ages
- The city from the *Middle-Age* with its fortifications
- The '*faubourgs*' of the 18th and 19th century with their predominant individual houses
- The *suburbs*, whose expansion took place in the 1970s over surrounding villages
- The *periurban areas*, which have experienced rapid growth

One should stress that suburbs only developed from the 1970s onwards (Zytnicki, 2002). Until that period Toulouse -one of the largest communal territories in France, just after Paris but before Lyon- only had '*faubourgs*' (Bonnetoy, Saint-Cyprien). Over a period of 30 years suburbs mainly fed urban growth: Colomiers grew from 23,266 inhabitants in 1982 to 28,538 inhabitants in 1999, Blagnac from 14,929 inhabitants to 20,586 inhabitants. Periurbanisation occurred in Toulouse while the '*grands ensembles*' (standardised high-density and high-rise social housing located in the outskirts of the city) as an urban model were contested and individual housing or small-size collective housing was developed. This type of housing attracted the middle classes to the suburbs –skilled workers, employees, executives and intellectual professionals.

Other characteristics of the UAT include the following (Laborie, Sibertin-Blanc, Albert, 2005):

- 40 per cent of the population live in the central city of Toulouse.
- The central city has a low density, but occupies a large communal territory.
- Communes located within the UAT are small-size towns with low density in both suburbs and periurban areas: population is scattered in a number of small communes (out of the 342 communes, 162 have less than 500 inhabitants, and 104 have between

500 and 2,000 inhabitants). There is an average of 754 inhabitants in the periruban areas.

❖ *Culture and sport facilities*

While much of the cultural and sport facilities are concentrated in the central city of Toulouse the western and northwestern parts of the Toulouse agglomeration enjoy a high standard of such activities – especially in particular towns such as Blagnac, Colomiers and Tournefeuille. They have developed such facilities before other towns by integrating them into urban policy. In Blagnac there is a concert hall connected to a media centre (Odyssud), which offers a high quality arts programme including theatre, music and dance shows that are usually part of national tours. Blagnac recently built a skating rink, which is unusual for a suburban town. There is an international high school in Colomiers with two foreign sections (German and British) that can accommodate children from foreign salaried staff working on Airbus. This is the only town that has a German section in a primary school.

Tournefeuille also has a well-acknowledged cultural policy as well as a policy supporting associations. Street shows and festivals (Cuba Hoy) are one of the highlights of the year. A cinema belonging to a national group has been opened and attracts a large audience from other towns. Tournefeuille, partly located in a green area (La Ramée), has also developed numerous cycle paths and invested in landscaping on the river banks (le Touch).

These selected examples show that municipalities are engaged in a process of differentiation, which reinforces their attraction. Some households are sensitive to such competitive advantages but this attractiveness costs money and has an impact on land and housing prices. Not all of them can afford it.

❖ *Transport infrastructure*

The rate of personal car use is one of the highest in France. But public transport has been developed over the past decade. The UAT has often been described as fragmented and multi-polarised. One of the main issues therefore is how to preserve social linkages in such a social and physical setting. The subway, a driverless (automatic) rubber-tyred train (VAL, Véhicule Automatique Léger), launched in 1993 is part of the answer: it connects the western and eastern parts of the city, and more importantly the historical centre and the deprived suburbs of le Mirail (A Line). The North-South B line (20 stations) is expected to open in 2007 and will link Borderouge and Ramonville-Saint-Agne. Line E (tram) will extend on 11 km between Arènes and Aéroconstellation, via Purpan, Ancely and Blagnac. It is planned as a complement to the metro and will link up with old areas such as Casselardit and Ancely, and cause rapid change in neighborhoods such as Zénith, Purpan and la Cartoucherie. In addition, a suburban line C (a classical railway line with SNCF trains) is connected to A line. Another commuter train line (D) runs to the city of Muret. Urban transport in Toulouse (metro, bus, mobibus) is managed by a mixed syndicate composed of various local authorities. The subway has been a great success since its creation with a daily flow of 120,000 travellers.

In addition Toulouse has an international airport ‘Toulouse-Blagnac’, which is the fourth largest airport in France outside Paris, a central train station with six branches of TGV (High Speed Train), including routes to Bordeaux (two hours) and Paris (five hours) and Regional trains (TER) (Tables 3.15 and 3.16).

Table 3.15 Transport infrastructure and equipment in the UAT

<ul style="list-style-type: none"> • A radial network of roads: five highways (A20 to Paris and the centre of France, A64 to Basque Region, A62 to Bordeaux and the Atlantic coast, A61 to the Mediterranean Sea). Poor connections between Toulouse and Aragon through the Pyrénées on the French side; poor connections between Toulouse and Lyon. Toulouse is not located on a main axis in Europe: transport flows through Toulouse remain modest. Large agglomerations in France are located within more than two hours distance by road (Bordeaux and Montpellier: 2h25 with car transport); other large metropolitan areas are located within 4 hours distance (Marseille), five hours (Lyon) and six hours and a half (Paris). Barcelona and Bilbao: half a day; Madrid one day travel by car.
<ul style="list-style-type: none"> • A radial network of railways: six branches to Paris, Bordeaux (Atlantic), Mediterranean and Basque Region. Toulouse is located on the itinerary between Atlantic and Mediterranean Sea. But performance of transport is low: five hours to Paris; five hours for Barcelona, four hours for Marseille and Lyon, two hours to Bordeaux. Toulouse benefits from TGV services (Fast Train) but does not have a High Speed Line between Toulouse and Bordeaux. Toulouse lies behind other major cities in France regarding fast train connections (the connection to Paris is not expected before 2016 and the connection to the fast line on the Mediterranean sea to link up with Barcelona and Madrid in the South and Rhone Valley in the East is still pending).
<ul style="list-style-type: none"> • The international airport ‘Toulouse-Blagnac’, is the 4th largest airport in France outside Paris, 1 central train station with 6 branches of TGV (High Speed Train), including to Bordeaux (two hours) and Paris (five hours) and Regional trains (TER). The Airport is connected to central train station by bus
<ul style="list-style-type: none"> • 24 regular international air services, 14 regular national air services, 50 charter air services; European cities at least than 2 hours flight; 6 metropolises have more than 10 air services a week (Madrid: 43 flights per week, London-Gatwick: 35, Munich; 35, Amsterdam: 21, Frankfurt: 21)

Table 3.16 Passenger transport (numbers, modal share) in the UAT

<p>Air transport provided for 5,6 million passengers in 2004 with an increase in international traffic, which represents 35 per cent of the total traffic (80 per cent from Europe). In 2004 regular traffic with Europe increased by 20 per cent. Links with Paris represent 53 per cent of the airport traffic followed by London, Lyon, Amsterdam, Munich, Frankfurt and Madrid.</p>

3.3 Conclusion

The development path of Toulouse is characterised by an early specialisation in higher education and research (in the late 19th century) and in electricity and chemical engineering, while the aeronautics industry emerged during the First World War and further developed in the 1950s. As a result, Toulouse is neither in search of new activities nor seeking a shift in economic specialisation but rather is involved in a cumulative process of capitalising and building up on technical and human capital assets. In terms of employment Toulouse relies on four main sectors: aeronautics, space, electronics and chemistry-pharmacy-biotechnology. Recently there has been a growth in business services, in particular in ICT sectors (computer industry and engineering). Economic specialisation in high technology (aeronautics, space

sector, computer industry) has been largely driven by public policies implemented at different levels. The strong economic development of recent decades is in part due to the decentralisation of many sectors, such as meteorology, civil aviation, and space activities. The relations between science, research and industry have played a key role in economic development although the interrelations between these sectors started relatively late (in the 1960s). Local authorities and inter-communal structures have also been active in local policies and contributed to the development of business and technological parks. Apart from the region of Paris, Grenoble and Toulouse have the most important urban innovation systems in France and are by far the leading provincial centres for cooperation between universities or research organisations and firms.

As a result of this economic specialisation the UAT displays distinctive features: the population has a high degree of education compared to other urban areas; the share of highly qualified occupations and intermediate occupations has been increasing. Toulouse is one of the urban areas that have the highest household incomes. Disparities between incomes are greater than elsewhere in the country, in particular within the city centre as opposed to suburbs and periurban areas. The social division of labour and the labour market, dominated by highly qualified jobs in computer industry, electronics and management and consulting services, have generated a high degree of social polarisation. Specialised 'Centres of excellence' developed by local authorities along with major adjacent urban renewal projects have shaped strong differentiation between sectors of activities and between centre and periphery.

4 CURRENT SITUATION IN THE METROPOLITAN REGION 2000-2005

4.1 Recent economic development

The rising number of establishments²⁵ in the UAT over recent years (an increase of 20 per cent between 1993 and 2002) demonstrates economic dynamism. The predominance of tertiary activities has been reinforced (trade and services) due to the rise in business services (40 per cent increase). Compared with other urban areas in France there is also a rise in the number of personal services (20 per cent increase). The automobile industry and agriculture sectors are declining while other industries have remained at the same level or increased (transport and construction in particular). In 2002 50 per cent of the establishments of the UAT were concentrated in the city of Toulouse compared with 57 per cent in 1993. The number of establishments in the suburbs increased, in particular for capital and intermediate goods. In the periurban areas food and agricultural industries are among the most important (Laborie, Sibertin-Blanc, Albert, 2005) (see Tables 4.1A and 4.2A in appendix for details on sectors and enterprises).

While aeronautics activities remain significant in terms of employment and sub-contracting firms the recent evolution of Airbus has some implications for Toulouse (see section 6 on critical challenges). There are also recent trends towards diversification in biotechnology and health (see section 6).

Recent economic development is also apparent in computer industry. There has been a vertical disintegration process since 1992: more and more computer services in aeronautics and the space sector are being contracted out to independent producers (this increased tenfold between 1992 and 2002) (Zuliani, 2006).

4.2 Growing and declining economic activities and evolution of the labour force

Salaried employment in the private sector has grown significantly in the UAT between 1993 and 2004 (an increase of 3.48 per cent per year, and 13 per cent over the period 2000-2004) (AUAT, 2006d). With 8,500 additional private salaried staff²⁶ in 2004 the UAT enjoys one of

²⁵ Establishment is the place where firm activities are taking place. Firm is the legal or physical entity. It can have different activities in one or more establishments in different places.

²⁶ Private salaried staff includes all staff registered for the unemployment insurance scheme (this comprises private industrial and commercial sectors for which affiliation is compulsory and industrial and commercial public sector which opted for a direct affiliation to this scheme).

the highest rates of employment growth in France (an increase of 2.8 per cent compared with 2003 and well above the national average of 0.3 per cent). Services and construction activities are among the most dynamic sectors (growing by 4 per cent and 4.3 per cent respectively).

Private salaried staff especially rose in the suburbs: they accommodated 64 per cent of all new jobs in the UAT (25,000 jobs) between 2000 and 2004. The suburbs represent 40 per cent of employment in the urban area in 2004 compared with 33 per cent in 1994. Employment in the periurban area remains stable at about 8 per cent. The share of private employment in the city of Toulouse has declined from 60 per cent in 1994 to 52 per cent in 2004.

Tertiary employment represents 85 per cent of the new jobs in 2004 and 75 per cent of total employment. Growth has mainly occurred in the residential economy (education, health, social care and personal services) directly connected to urban growth, and through outsourcing of industrial services (engineering and computer industry, consulting, security and cleaning services). Construction is the second fastest growing sector in terms of employment with 1,000 more jobs in 2004. The rise in the construction sector is mainly due to the growth in new construction and the development of large transport infrastructures.

In 2004 6,600 new jobs were created in the services sector, with one third in business services. Business services is the sector that employs the highest number of staff in the UAT with 60,000 private salaried staff.

Computer activities experienced a net gain of 900 jobs in 2004 followed by health and social care (750 net gain), hotel and restaurants (650 net gain). In contrast jobs in recreation, cultural and sports activities saw a net decline of 150 jobs (Tables 4.3 and 4.4).

Table 4.3 Overview of growing and declining sectors of activities in the UAT in terms of private salaried staff (2004)

Sectors with the highest growth in terms of employment	Sectors with the greatest decline in terms of employment
Business services	Insurance
Computer activities	Public administration
Health and social care	Financial intermediary
Hotels and restaurants	Renting without operator (NACE 71)
Real estate	Recreation, cultural and sport activities

Source: AUAT, 2006d

Table 4.4 Evolution of private salaried staff in the UAT according to sectors of activity (2000-2004)

	Commerce	Construction	Industry	Services	Total
Annual growth 2000-2004 (per cent)	+2.6	+3.7	-0.2	+4.4	+3.1

Source: AUAT, 2006d

4.3 Economic profile (specialisation)

Two specialised poles have emerged in Toulouse based on local qualification and expertise. First, industrial activities linked to aeronautics and space such as electric and electronic equipments and components, metallurgy and metal transformation (Table 4.5). These

activities are among the most exported oriented and are driven by external demand. Second, agribusiness mainly linked to biotechnologies (AUAT, 2006c).

Table 4.5 Industry: sectorial specialisation in the UAT (2004)

Sector of activities	Per cent of employment
Naval, aeronautics and railways construction	30.2
Electric and electronic equipments industries	13.7
Electric and electronic components industries	9.7
Metallurgy and metal transformation	9.2
Mechanical equipment industries	7.6
Agricultural and food industries	6.2
Edition, printing and reproduction	5.6
Mineral products industries	3.7
Chemistry, rubber and plastic	3.6
Household equipment industries	2.2
Water, gas and electricity	2.2
Pharmacy and perfume	1.8
Wood and paper industries	1.7
Clothing, leather	1.5
Automobile industries	0.4
Textile industry	0.4
Total	100

Source: AUAT, 2006c

The tertiarisation of employment, in particular the growth of business services in the UAT, has already been mentioned (see section 4.2). There is also a trend towards more technical business services: the share of technological and highly qualified services has increased. This demonstrates the ‘technological intensity’ of the UAT: the index of specialisation (the share of high technology in the total salaried employment) is 17.8. The three main high technological sectors are aeronautics (31 per cent), computer industry (22 per cent) and engineering (21 per cent) (AUAT, 2006c).

The share of ICT within the salaried population is high in the UAT (9.41 per cent in 2004 compared with 5 per cent at national level). Out of a total of 29,384 salaried staff 15,334 work in the computer industry, 7,339 in electronics and 6,711 in telecommunications (AUAT, 2006c).

Aeronautics remains a significant sector in terms of employment: between 2002 and 2004 Airbus created almost 1,000 jobs per year in Toulouse. There are 12,000 jobs in total. This comes in addition to personnel from the international direction of Airbus society in Blagnac (AIC; Airbus Integrated Company), which amounts to 4,000 persons (Leriche, Zuliani, 2007). Toulouse occupies a key position in the Airbus system. It coordinates three overlapping and complementary functions that constitutes the core of the local aeronautics productive system²⁷: (i) programme engineering and conception, (ii) assembly, test and flight, (iii) commercialisation and delivering of aircraft. These ‘noble’ parts have been reinforced throughout the past 30 years, in particular by accommodating Airbus central headquarter, the ‘Central Entity’, after Airbus firm transformed into an EADS subsidiary in 2000. Such a specialisation ensures that the Toulouse site benefits from a dynamic growth in a context of

²⁷ Text written by J.M. Zuliani and translated by E. Peyroux.

the steady worldwide commercialisation of programmes. Conception and production activities are highly integrated into the urban area through the relationships with sub-contracting firms, R&D and technological innovation, and the interventions of local authorities in the field of education and support to technological innovation (see section 6 for an analysis of recent development in Airbus and its implication for Toulouse).

4.4 Population composition, recent dynamic and social polarisation²⁸

The distribution of occupations based on ISCO-88 is presented in Table 3.11A in appendix. The main occupations in the UAT in 1999 were in level three, two and four: associate professional and technical occupations (23.7 per cent), followed by professional occupations (16.0 per cent) administrative and secretarial occupations (13.3 per cent), skilled trade occupations (12.0 per cent), sales and customer services occupations (10.8 per cent), managers and seniors officials (7.2 per cent), process, plant and machine operatives (6.9 per cent), elementary occupations (7.4 per cent) and personal services occupations (1.8 per cent). There are still strong social and territorial disparities regarding social polarisation. The trends presented in section 3.2.4 have been reinforced. Socio-spatial divisions linked to employment specialisation, in particular technological centres of excellence, remain the same and have even been reinforced in the far southeast and west-north-west peripheries of the urban pole.

Figure 4.1 Spatial distribution of executives and intellectual professions at residence place in the UAT (1999)

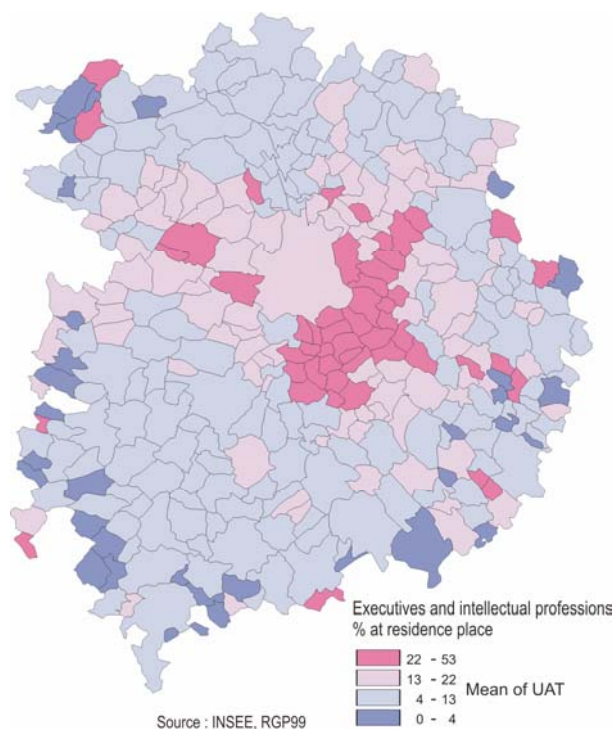
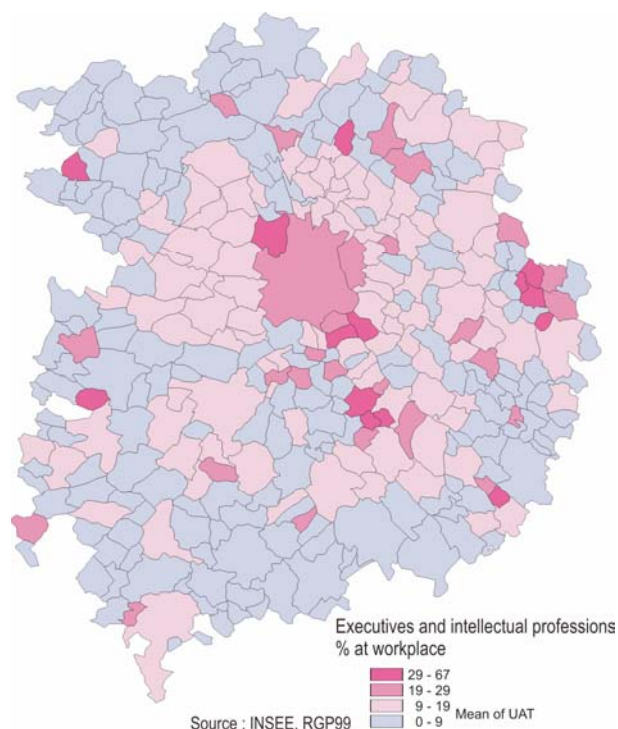


Figure 4.2 Spatial distribution of executives and intellectual professions at workplace in the UAT (1999)



Conception: F. Desbordes

²⁸ Text written by F. Laumière and edited and translated by E. Peyroux.

Disparities can be shown through two indicators for each municipal area: the level of education indicated by the share of population that has a higher qualification than A Level compared with the share of population that has a lower qualification than A Level (called the index of degree); and the share of executives and higher intellectual professionals among the working population. Based on these two indicators the southeastern part, and to a lesser extent, the northwestern part are clearly different from other parts of the urban area (Insee, AUAT, 2002). In southeastern areas the share of executives *at place of residence* is higher than 40 per cent or between 25 and 40 per cent (Figure 4.1).

The municipality of Toulouse has the highest share of the most highly qualified populations at *workplace* (Figure 4.2). Executives and higher intellectual professions represent 20 to 25 per cent of the population. There is internal differentiation however: areas in the city centre (Capitole, St Etienne, St Georges) and areas situated between the Garonne river et the Canal du Midi in the east have the highest concentrations of the wealthy and highly educated populations; such educated populations are also dominant in the eastern and southern residential faubourgs (Côte-Pavée, Terrasse, Château de l'Hers, Montaudran). Areas in the north (Ginestous, les Izards, Barrière de Paris) and in the south (Mirail, Bagatelle, Faourette), which have the largest share of social housing, have a very different social profile. Urban renewal projects implemented in the municipal area of Toulouse have little impact on such socio-spatial disparities. Social and socio-professional inequalities that can be seen in the central city are also developing in the peripheries.

The unemployment rate is another relevant indicator to assess social disparities. In the city of Toulouse it is between 15 and 20 per cent (1999 national census). In the southeastern areas and in the municipalities in the west-north-west part (except Colomiers) it is below 10 per cent. In the southern and northern municipalities the unemployment rate is between 10 and 15 per cent.

Foreign populations coming from Northern Europe concentrate in the northwestern part of the agglomeration. Town such as Tournefeuille, Blagnac, Colomiers but also Pibrac and Brax attract this salaried population due to their proximity with the aeronautics pole and the quality of lifestyle. This population chooses houses close to their compatriots. They also contribute by stimulating the development of public infrastructure, shops, and cultural events (there are new pubs in Pibrac and Blagnac, and a German library in Tournefeuille).

Other foreigner populations are also to be found in southern areas but there are more students among them, in particular from higher schools and universities of the complex of Rangueil (GDTA, Sup Aéro, UPS). Salaried staff from the space sector (Astrium, Interspace) is mainly located in the western areas but their duration of stay in Toulouse is shorter than the students. Foreign employees usually stay for the duration of a mission. The cosmopolitan imprint in the southeastern areas is therefore different but it also contributes to social differentiation at the scale of the urban area.

There are other areas where foreigners are over-represented, even more than in the wealthy areas. They mainly come from Maghreb, Sub-Saharan Africa or even Asia. The proportion of foreigners can reach between 20 and 30 per cent. This is the case in Bagatelle (23.7 per cent),

Bellefontaine (20 per cent) or Reynerie (27.5 per cent), all located in Le Mirail or close to it. The integration processes for these communities are different from European migrants. There is a high level of unemployment in these areas. Housing conditions are also different: they live in collective and social housing and the quality of dwellings is lower than in municipal areas where British and German nationals have settled.

In conclusion the UAT enjoys a positive image. Recent economic mutations and growing competitiveness are part and parcel of this image. This should not hide the fact that social divisions are also observed, as in any other city. In the central city as well in the peripheral areas social profiles are more and more contrasted. These contrasted profiles are linked to growing functional specialisations, the lack of improved land, land speculation and failing public and territorial policies.

4.5 Housing market and infrastructure²⁹

4.5.1 Trends in the housing market

The agglomeration of Toulouse is characterised by considerable urban sprawl mainly due to the fact that, until 1939, the extension of the city was only accomplished through individual housing schemes. Individual houses represented 51 per cent of principal residences in the urban area, in 1999 and 21 per cent in the central city of Toulouse (Table 4.6A in appendix). National policies strongly supported access to individual house ownership while locally, economic and demographic growth gave birth to large private housing schemes with detached houses.

Stratification in housing includes the following:

- Individual houses named '*Toulousaines*' built at the end of the 19th century while the public transport network developed. Today these are being sold, renovated or they disappear and are replaced by small buildings.
- Housing schemes from the 1930s, which formed the bourgeoisie neighbourhoods. They have gained value in recent years.
- The first social precast houses '*Maisons Courant*' of the 1960s and self-built housing promoted by the voluntary associations '*Castors*' ('Beavers').
- The housing schemes of the 1970s in the suburbs. These are still partly occupied by the initial populations, now aged and affected by the departure of children and by retirement.
- The housing estates from the 1980s located in the periurban areas, far away from the central city. Their residents could not afford to get access to ownership in the central city or the suburbs.
- More recent housing schemes from the 1990s spread over the whole urban area but also at the borders of the central city. Without such a supply many families would have left for the peripheral areas.
- Recently developed gated communities mainly in the suburbs.

²⁹ Text written by C. Thouzellier and edited and translated by E. Peyroux.

The housing market in the UAT is dynamic and very tight. Dwelling prices have multiplied by 5 in 50 years but the area is characterised by low dwelling density (1,1 dwelling per ha), including in the central city (19 dwellings per ha). There are more individual dwellings (51 per cent) than collective dwellings (49 per cent). There are more owners (55 per cent) than renters (45 per cent). About 90 per cent of dwellings are principal residences (Table 4.7A in appendix). See also Tables 4.8A, 4.9A in appendix for details on the types of dwelling.

In the central city of Toulouse 80 per cent of the dwellings are apartment buildings (as opposed to houses) and 70 per cent of the residents are tenants. The share of small dwellings is larger than in other parts of the urban area (40 per cent of housing units have one or two rooms) (Tables 4.7A and 4.10A in appendix). This is the opposite situation from the periurban area where housing units are bigger. However, there is a trend towards diversification: in the central city, where, in 1999, there was a concentration of small dwellings (90 per cent), there is an increase in larger housing units (one out of three dwellings). In the suburbs and in periurban areas small dwellings are developing and the issue of providing apartment buildings is currently being discussed (80 per cent of units are individual dwellings).

The share of social housing is low in the UAT: it only represents 12 per cent of principal residences. About 88 per cent of social housing are apartment buildings and half of the units were built before 1975. The density of social housing is lower than the national average (54 housing units for 1,000 inhabitants compared with 69 in France) (Tables 4.11A and 4.12A in appendix). The legal requirements with regard to the share of social housing in the cities are therefore not met in Toulouse: only four out of the 342 municipalities of the urban area have more than 20 per cent of social housing (Blagnac, Colomiers, Muret, Portet-sur-Garonne); 2/3 of the municipalities (222) have no social housing at all. Social housing in the central city represents 63 per cent of all social housing in the UAT. It is mainly located in the eastern and southwestern parts of the agglomeration. These areas concentrate 27 per cent of social housing in the agglomeration.

See also Tables 4.13A and 4.14A in appendix for additional data on dwellings including the level of amenities.

Toulouse is the urban area in France that has the larger share of gated communities. This phenomenon emerged in 1990 and has greatly developed since. Gated communities represent half of the construction of collective housing units. They are small units and cannot be compared with gated communities in the United States but they are based on the same principle of secured housing (Sabatier, 2005). In addition to security devices there are collective facilities such as pools, tennis courts, green areas and other services that make these private residences attractive. Initially launched by a single developer, gated communities now represent an important segment of the market for investors who benefited from various supporting schemes. Gated communities mainly developed in suburbs where they are now part of the landscape.

Market dynamism can be explained by different factors: a strong urban growth, low interest rates and the extension of the repayment period for housing loans, the existence of schemes to support renting investment and the purchase of houses, and the discrepancy between demand and supply with regards to rental housing (there is more demand for rental housing than supply).

Recent trends in the housing market include:

- An important increase in the new construction of collective housing units (+10 per cent each year) compared with new construction of individual houses (+2,4 per cent) in the central city, suburbs and periurban areas. In 2005, 60 per cent of the building permits were granted to collective dwellings. This refers to the growth of gated communities.
- A constant growth of the resale market, which represents 70 per cent of sold units in the UAT. This allows a diversification of supply.
- Private and social rental housing have mainly developed in peripheral areas. The average monthly renting price was €8/m² in 2004-2005.
- Prices are increasing for all types of housing (new construction, renting and purchasing of existing units) (Table 4.15). In 2003 the average price increase was 24.2 per cent. But the rate of price increase slowed down in 2005 (+16.5 per cent) and is estimated to fall to +10 per cent in 2006.

Table 4.15 Selling prices in the UAT in 2004 (€/m²)

	New flats	Existing flats	Private house estate
Toulouse	2,530	1,683	2,160
Suburbs	2,324	2,324	1,988
Peri-central areas	2,411	2,411	1,935

Source: AUAT, 2006j

- Due to such high prices access to housing is difficult for middle and lower income households. This is also an impediment to gain access to ownership. Households with low incomes, who wish to purchase a house, have to move further away from the central city.
- Since 2000 there has been an increase in public funds dedicated to social housing, partly through the National Agency for Urban Renewal (ANRU). However, rental social housing remains insufficient while demand is increasing. There are about 24,100 applications for social housing in the Haute-Garonne Department, and of these 18,600 are not satisfied (these demands essentially come from the Toulouse agglomeration) (AUAT, 2006j).

4.5.2 Real estate office market³⁰

Office properties represent a total of 2,650,000 m², or 1,100 buildings, and 85 per cent of these are located in the urban pole of Toulouse due to the large concentration of public administration buildings. This is a high quality stock with local services. A large share of the supply is concentrated in the central areas of the city of Toulouse. They are among the most expensive and receive the largest investment. 11 per cent of the office properties are located in the inner city, 65 per cent in industrial areas and 20 per cent are scattered over the whole territory. 40 per cent of office properties are rented. Office properties are mainly occupied by the aeronautics, computer and space sectors (Conférence Interscot, 2006).

³⁰ Text written by C. Thouzellier, translated and enriched by E. Peyroux.

With an average of 100,000 m² commercialised per year for the past 10 years, Toulouse has become a key player in the French territory. It ranks 4th among regional metropolises. The stability of demand is an advantage for investors. But Toulouse lags way behind large European metropolises (Conférence Interscot, 2006).

The office market is tense. There is not enough stock available (AUAT, 2006b) and most of office properties are outdated. In the 2000s construction and commercialisation of offices started again but stock remains insufficient. At the end of 2005 the stock available was estimated to eight-month supply (76,000 m² among which 14,000 newly constructed or recent) (AUAT, 2006b); at the end of 2006 it amounted to 55,400 m² or six-month supply whereas demands were estimate between 100,000 and 120,000 m². There is not enough construction whereas demands are targeted to new office buildings. The stock, mainly composed of surfaces of less than 500 m², is partly inadequate to users who look for surface larger than 1,000 m². Office available usually needs upgrading or do not provide parking lots (Conférence Interscot, 2006). A large share of the demand comes from companies or administrations located in the agglomeration of Toulouse that wish to expand and there is almost no supply in the inner city.

Offices available are mainly located in the Labège technopole (7,000 m²), the airport zone of Blagnac (7,000 m²) and in two other industrial areas (Montaudran, 10,000 m², La Cépière, 8,500 m²). There is a lack of stock available in the northwest.

New construction projects are planned for 2006 (26,000 m² in Bordelongue, 35,000 m² in the future Canceropole site, 4,000 m² in Basso Cambo, and 5,000 m² in Labège among others). Location and purchasing prices have been constantly increasing for five years³¹. Land reserves in the UAT represent 1,800 ha for activities that are already available for various schemes and 700 potential hectares for the long term (Conférence Interscot, 2006). Local authorities created a local land plan for Greater Toulouse in 2006 to manage land reserves and regulate market and prices. One of the emerging principles is to promote high density projects and plan for both economic and housing functions (AUAT, 2006b).

4.5.3 Urban renewal policies

After the left-wing party came back to power in the late 1990s 'Contracts for the City' were launched. Toulouse signed a contract for the period 2000-2006 managed by a Grouping of Public Interest (GIP). 30 municipalities were associated: 21 from the Community of Agglomeration of Greater Toulouse (CAGT), six from the SICOVAL and three from other municipalities. The objective of the Contract for the City was to combine interventions, in particular measures against exclusion, at the scale of the agglomeration with specific actions in deprived neighbourhoods. 15 agreements were included in the Contract: nine were thematic

³¹ Renting prices for a new office is 220€/m² in the inner city and between 125€/m² and 140€/m² in the periphery; purchasing prices for office properties are 2,000€/m² for new ones and between 1,200€/m² and 1,500€/m² for old ones in the inner city; due to the backlog of offices prices in the inner city can reach 2,500 3,000€/m².

ones and included public employment policy, delinquency, education, prevention, health, culture and social housing; six were territorial ones dealing with specific areas.

One of the major agreements was the 'Great Project for the City' (GPV) signed in 2002 with a budget of 142 millions euros. It promotes the transformation of deprived neighborhoods through demolition, reconstruction, rehabilitation and residential growth. The city of Toulouse applied for the scheme and was among the 50 cities that obtained funding. Areas of interventions included Bellefontaine, Reynerie, Mirail-Université, La Faourette, Bagatelle, Papus, Tabar, Bordelongue and Empalot. The scheme took into consideration the consequences of the explosion at the AZF chemistry firm in 2001.

Reducing the unemployment rate was a key challenge of the GPV. An urban free zone (ZFU) was created and companies benefited from rate and tax exemptions over a five-year period. Companies had to employ at least 20 per cent of persons living in the neighbourhood. Since January 2004 605 companies were created and generated 845 new jobs, among which 39 per cent were given to local residents.

In 2007, 'Urban Contracts' will replace Contracts for the City for Social Cohesion (CUCS). The requalification of neighbourhoods will be based on negotiation between municipalities and a new agency called 'National Agency for Urban Renewal' (ANRU) was created through the adoption of a law on urban renewal.

Many large-scale urban projects combining economic activities and housing are being implemented:

- The former site of the AZF chemistry firm, destroyed by an explosion in 2001, will host a complex dedicated to biotechnology for both firms and researchers (Cancéropole). An expected 4,000 jobs will be created.
- The Campus Project 'Aérospatiale' in Montaudran will specialise in education and research activities. 1,000 researchers (ONERA, CNRS, CNES) are expected to work on the campus. The future headquarter of Galileo (European navigation system) is also expected to settle there. 1,500 housing units should be constructed.
- The availability of land reserves in Toulouse has allowed the AeroConstellation project to be established in the urban area (the alternative was Hamburg but the industrial site of the German city could not be extended) (Jalabert, Zuliani, 2004). Municipalities in the northwestern part of Toulouse (SIVOM Constellation) have made 370 hectares available to the project by transferring activities and by using expropriation procedures. The site is located next to the airport and extends over three municipalities. Two ZAC (Concerted Action Zone)³² will be added to the economic development zone: the ZAC Andromède with 3,700 housing units and public infrastructure stretching over 210 hectares in the municipality of Blagnac, and the ZAC Monge-Croix du Sud in Cornebarrieu (850 housing units over 57 hectares).
- ZAC Ramassiers in Colomiers with 1,450 dwellings.

³² Implemented from the 1970s onwards ZAC are designated areas within which the local authorities decide to finance public infrastructures (potable water, sanitation, streets, schools, housing schemes) with the aim of developing the land and handing it over to public or private users.

There are other ZAC projects in the central city that should provide additional dwellings (Ponts-Jumeaux, Job-Garonne, Cartoucherie, Niel). They aim at reducing the housing backlog and at accommodating new incomers. These areas are part of the densification project of the central city and are meant to restrain urban sprawl. 50 per cent of the dwellings are provided for ownership, 20 to 30 per cent for social housing and the remaining for rental. These housing projects are supported by municipal policies such as loans with no interest rates that come in addition to the one already available to low-income families.

4.6 Tolerance, openness, diversity³³

4.6.1 Social and cultural diversity

Languages, cultures and religions are mixed in Toulouse. Since the 1960s the agglomeration has hosted a significant Jewish community (probably 15-20,000 people), but less numerous than in Paris, Marseille or Nice. Figures remain extremely vague, as there cannot be a strict definition of who belongs to the community. Thousands of 'sepharad' families have migrated after the decolonisation of Maghreb, revitalising a modest community, which in the 1950s accounted for no more than two to three thousand people. There are no real boundaries between the ashkenaze 'old community' and the sepharade 'newcomers' from the 1950s and 1960s, since intermarriages have become very frequent. The 'external' boundaries of the community are fuzzy, as many Toulouse Jews got married outside the community (especially during the 1970s), making it very diverse. This reflects the general landscape of an open and mobile urban society, also affected by constant in- and out-migration flows.

Many Spanish exiles settled in Toulouse during the Spanish civil war (1936-1939). They have been fully integrated into the local society. The proximity of Spain and steady emigration over the years explain why Spanish culture is widespread in Toulouse and Spanish is a commonly spoken language in the city. The Cervantes Institute, created in 1991 under the tutelage of the Spanish Ministry of Foreign Affairs, aims at promoting Spanish teaching and culture. Various cultural events are organised and contribute to the diffusion of the culture of Spanish-speaking countries:

- The Cinespaña festival, created in 1992, is the window screen of Spanish cinema each year: with more than 2,400 films presented since its creation, the festival represents the largest film programme in Europe, with a particular attention to first movies.
- The yearly meeting of Latin America Cinema, organised by an association, proposes about 80 unseen feature-length films every year and over 100 professionals from the cinematographic industry are invited. A review is published every year.
- The ¡Mira! was launched in 2001 to boost exchange and cooperation between France and Spain in visual and art performing (theatre, dance, music) and promote contemporary creativity in the Great European South-West.

³³ Text written by C. Thouzellier, translated and enriched by E. Peyroux, enriched by D. Eckert.

- The Rio Loco festival, which offers music and art expressions around a river and a country, will be dedicated to Spain in 2007.
- Finally the University of Toulouse-Le Mirail has a documentation centre on Latin America (with about 11,000 documents including books and research documents, grey literature, and statistics).

There has been a revival of the occitan culture³⁴ in Toulouse. More and more associations are set up and active in Toulouse and the Midi-Pyrénées region to promote the re-appropriation of language and culture. A House for Occitanie was open in 2006 in Toulouse with the financial help of the Haute-Garonne *Département* and the Midi-Pyrénées *Région* (the cost of the project amounts to €3 million). The House hosts about 50 associations whose objective is to diffuse cultural products, but also to be a place for debate and knowledge transmission. Conferences, meetings, exhibitions, concerts will be organised. A press room with TV and radio studios will contribute to give media coverage to the Occitan culture. A second building with an Occitan Conservatory (dance and music), a new bi-lingual school and an associative creche is planned for 2008: this represents €8 million, co-financed by the municipality of Toulouse, the *Région* and the *Département* (*Toulousemag*, 02/2007).

Due to the international immigration of working force different languages are spoken in Toulouse: Arabic in the suburbs where immigrants from Northern Africa have settled (la Reynerie); English and German in the western suburbs where employees of the aeronautical sectors coming from Germany or Great-Britain are localised.

There is a strong community mobilisation for the preservation of the old urban environment and the architectural legacy: among others, residents associations succeeded in preserving the character of the allées de Brienne along a canal, in saving the old Tobacco factory from destruction (it was turned into a university building), or in keeping the banks of the Garonne river away from car traffic. The architectural heritage was renovated (including the roman basilique of Saint-Sernin, the gothic convent of the Jacobins, the Capitouls' mansions and bridges such as les Ponts-Jumeaux or pont Saint-Pierre).

Local associations are also active in revitalising social relationships and promoting solidarity in deprived areas. New forms of musical and political creativity have emerged in the northern areas of which the music band Zebda and the political movement 'Motivé-e-s' are emblematic.

Places of socialisation developed. Neighbourhoods' dinners have spread out of the initiative in one area (Arnaud Bernard area); markets are places of exchange.

These social movements are seen as a resistance to the social and spatial multipolarisation process characteristic of metropolises.

³⁴ Occitania (Occitan: Occitània) refers to the lands where Occitan is the traditional language in use, generally nowadays as a minority language. Most of Occitania is in Southern France, other parts are in Italy (Occitan Valleys), Spain (Aran Valley) and include Monaco (so the main languages in Occitania are nowadays French, Italian and Spanish).

4.6.2 *The gay milieu in Toulouse*³⁵

The significance of the gay milieu in Toulouse is comparable to other cities of similar size in France, although the 1980s were a period of activism. A now dismantled association named 'GELEM' (*Gay et Lesbiennes En Marche*/Marching Gay and Lesbians) was created in 1997 and was among the first to launch the 'Lesbian and Gay Pride'. The Gay Pride parade has been taking place in Toulouse since 1995 and became the 'Homosexual March' in 2000, and more recently the '*Marche des Fiertés*' (Pride March). The association 'Arc-en-Ciel' (Rainbow), which is a federation of 13 associations, has been organising it since 2005. A student association named '*Jules et Julie*' was created ten years ago and enjoys a large audience in the universities of Toulouse.

As in any other cities there are gay cafes, restaurants and sex-clubs. Toulouse is even well-known for the large number of gay or gay friendly restaurants, more than for the bars (which are more numerous in cities such as Paris or Montpellier) or backrooms (usually found in Paris, Nice, Lyon, Bordeaux). There are usual dating places (Gaissad, 2007) (Prairie des Filtes, Cours Dillon, Ile du Ramier, La Ramée), and they are now spreading in the suburbs (Fenouillet, Lacroix-Falgarde).

Toulouse appears to be tolerant, not particularly gay or homophobic, although traditional society in the South-West of France is known for having machismo representations, like the ones connected to rugby, well developed in the region. The first gay rugby team ('The Gays Tou Win') has even been recently created in Toulouse.

Toulouse is well known for attracting lesbians and has even been named 'lesbopôle' (*Toulouse Mag*, 01/2007). The creation of a lesbian café 'Le Bagdam Café' in the inner city in 1988 may have contributed to make this community visible in the city. This café, which lasted 10 years, was only open for women and stimulated cultural and political debates driven by feminist ideas. Other places are now operating and the café has become an association 'Lesbian Space Bagdam' that organises cultural activities and supports the Lesbian movement.

The city of Toulouse, located far away from the area of influence of other large cities (Toulouse is two hours away from Bordeaux and Montpellier), is a significant place for homosexuals as there is no competition from the neighbouring medium size cities.

4.6.3 *Security issues*³⁶

Statistics on delinquency are rising in Toulouse. Policemen were even arraigned by the Interior Minister himself three years ago for not showing enough good results. They were blamed for spending too much of their time in difficult neighbourhoods, with actions targeted at youths, instead of resolving cases. Since then the police were reorganised but after a period of decrease delinquency grew again.

³⁵ Text written by C. Thouzellier and translated by E. Peyroux.

³⁶ Text written by C. Thouzellier, translated by E. Peyroux.

The regional daily newspaper *La Dépêche du Midi* (7/12/2006) recently underlined the paradox that delinquency increased whereas policemen and gendarmes were working harder than ever. Burning down cars, which is a local but also French speciality, almost doubled in two years: 586 cases were registered in 2004, 982 in 2005 and 1047 in 11 months in 2006 (*La Dépêche du Midi*, 9/12/2006).

Obtaining statistics for the UAT is difficult as these figures are either available at the scale of the Haute-Garonne Department or at the scale of the public circumscriptions used by the Interior Ministry. This circumscription includes the central city of Toulouse and the municipalities of Blagnac, Colomiers et Tournefeuille (bearing in mind that the UAT is composed of 342 municipalities).

The circumscription of Toulouse ranked 11 with regard to crime rates out of 70 cities in France (*Le Nouvel Observateur*, n° 2201, January 2007). Crime rates reached 115 per hundred in 2004 and 114 per hundred in 2005. But this slight decrease has not been confirmed by recent figures. While delinquency at a national level decreased by 1.3 per cent it rose by 3.47 per cent in Toulouse (*La Dépêche du Midi*, 16/01/2007). Despite efforts made by the police the crime solution rate remains low (22.62 per cent) and keeps Toulouse at the bottom in the ranking of cities of similar size. Violence and property crime are the most important crime categories.

The most frequent offences have been listed at the scale of the Haute-Garonne Department for the period November 2005-October 2006 (*La Dépêche du Midi*, 07/12/2006). This includes car and motorcycle theft (21,752 offences), 'simple thefts' such as cell phones and handbag thefts (21,752 offences), and false pretences (6 045 offences). The fastest rising categories include all form of violence (+16.6 per cent), and housebreaking (8,712 offences, +10.4 per cent). Delinquency, which used to be concentrated in the central city, is now spreading in the peripheral areas.

Many reasons for explaining the increase in crime have been put forward. The increase in policy activities has led to an increase in registered offences. Citizen's reports to the police are on the rise as well, even for minor offences. In a wealthy and attractive city marginalisation and pauperisation might also explain the increase in minor offences. Close Circuit Television (CCTV) will be implemented in the inner city in 2007 (12 cameras) with the financial contribution of storekeepers in the most luxurious sections of the city (which is unusual in France) (*Métro*, 19/12/2006). This project has been contested and the city plans to create an ethics commission for CCTV.

4.7 Conclusion

The rising number of establishments in the UAT over the past years (+20 per cent between 1993 and 2002) demonstrates economic dynamism. The predominance of tertiary activities has been reinforced due to the rise in business services (+40 per cent). The share of technological and highly qualified services has also increased, demonstrating the 'technological intensity' of the UAT. In addition to business services, computer activities,

health and social care, hotels and restaurants and real estates are among growing sectors. Salaried employment in the private sector grew significantly between 1993 and 2004 and the UAT enjoys one of the highest rates of employment growth in France, well above the national average. Despite current restructuring processes in the Airbus firm, aeronautics activities remain significant in terms of employment (between 2002 and 2004 Airbus created almost 1,000 jobs per year in Toulouse). There are also trends towards diversification in biotechnology and health. This is reflected in the two specialised clusters that have emerged in Toulouse based on local qualification and expertise: on the one hand industrial activities linked to aeronautics and space such as electric and electronic equipment and components, metallurgy and metal transformation; on the other hand agribusiness mainly linked to biotechnologies. When considering urban development socio-spatial divisions linked to economic specialisation have been reinforced, leading to strong social and territorial disparities. The housing market, characterised by rising prices for all types of housing (new construction, renting and purchase of existing units), makes it difficult for lower income households to access ownership in the central city. Despite an increase in public funds dedicated to social housing, rental social housing, whose share in Toulouse is low, remains insufficient while demand is increasing. The real estate office market is tight due to the lack of suitable stock and new construction projects are being planned in the next years. Location and purchase prices have been constantly increasing for the past five years. High-density projects and a combination of economic and housing functions figure among the new emerging principles.

5 THE STATE OF THE CREATIVE INDUSTRIES AND THE KNOWLEDGE ECONOMY 2000-2005

Following our analysis of the development path of Toulouse as a technopole we focus on a number of related creative sectors: ICT, Law and other business services and R&D and higher education³⁷. We also present a qualitative analysis of cultural policies and cultural supply in Toulouse, and this illustrates other creative sectors in Toulouse and their contribution to soft factors.

5.1 Creative and knowledge-intensive sectors in Toulouse

The distribution of working population according to creative and knowledge-intensive sectors based on the British classification shows the importance of ICT (5.0 per cent), law and other business services (4.6 per cent) and R&D and higher education (3.9 per cent) (Table 5.2, see also detailed sub-sectors in Table 5.1A in appendix). This reflects the economic profile of Toulouse as a knowledge-intensive technopole. Creative industries represent 6.2 per cent of the working population but there is no significant concentration in one or more sub-sectors except architecture (1.7 per cent). The NACE category 1 as available in France does not provide data on craft and design. Regarding the sector “Arts/Antique trade” it is included in the sections 524 and 525 of NACE rev.1. As no sub-categories were available the data provided in the table below include arts/antique trades as well as other retail sales of second-hand goods.

Table 5.2 Overview of working population in creative and knowledge-intensive sectors in the UAT (1999)

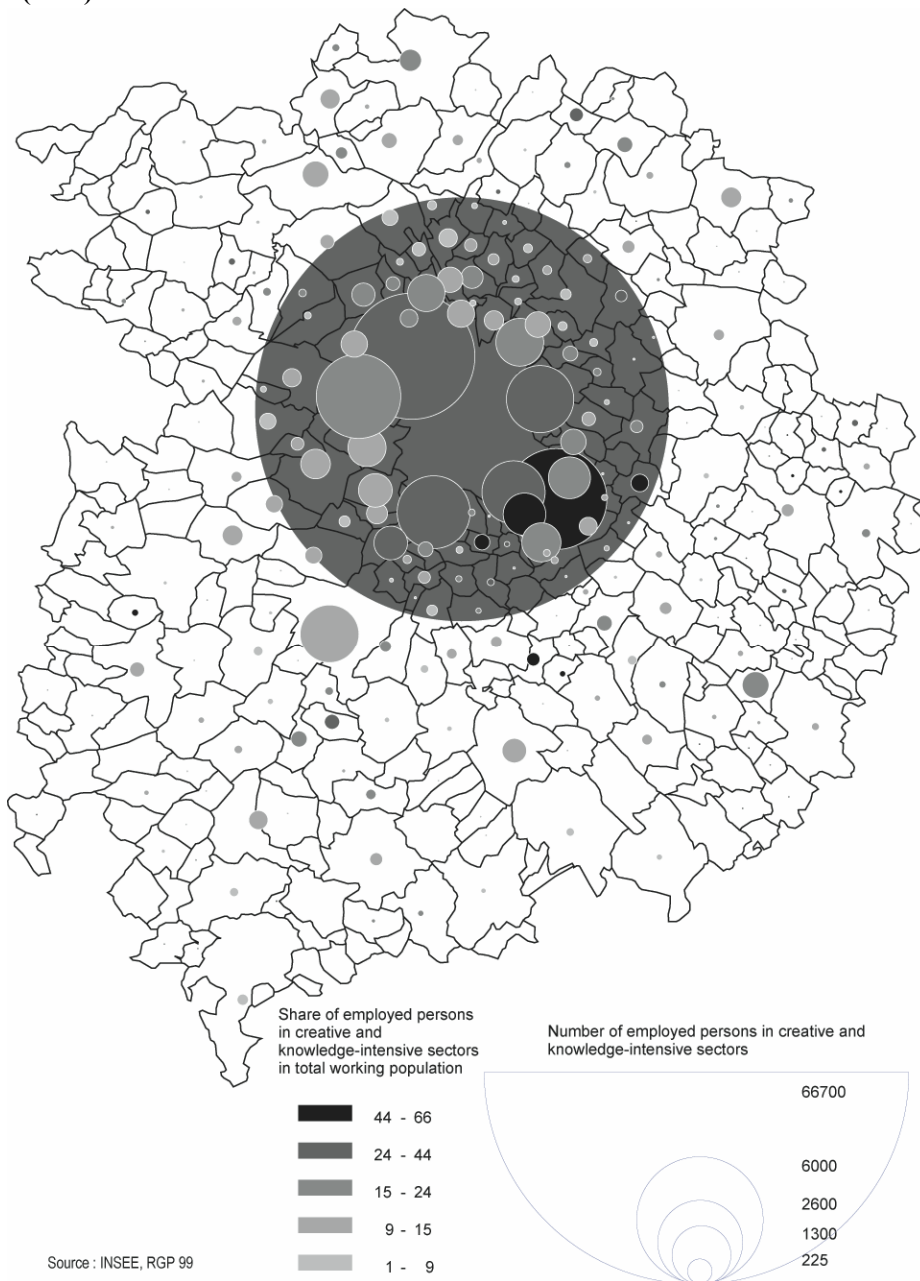
Sectors of activity based on NACE rev.1	Number of employed persons	Per cent of working population
1. Creative industries		6.2
Advertising	1,787	0.4
Architecture	6,851	1.7
Arts/antiques trade*	1,115	0.3
Crafts	-	-
Design	-	-
Designer fashion	2,284	0.6
Video, film, music and photography	4,320	1.1
Music and the visual and performing arts	2,732	0.7
Publishing	1,852	0.5
Computer games, software, electronic publishing	3,335	0.8
Radio and TV	582	0.1

³⁷ Detailed tables of creative and knowledge-intensive sectors of activity and occupations are presented in appendix (Table 5.1A).

2. Information Communication Technology (adapted from OECD definition)	19,969	5.0
3. Finances	9,684	2.4
4. Law and other business services	18,518	4.6
5. R&D and higher education	15,451	3.9
Total	88,480	22.1

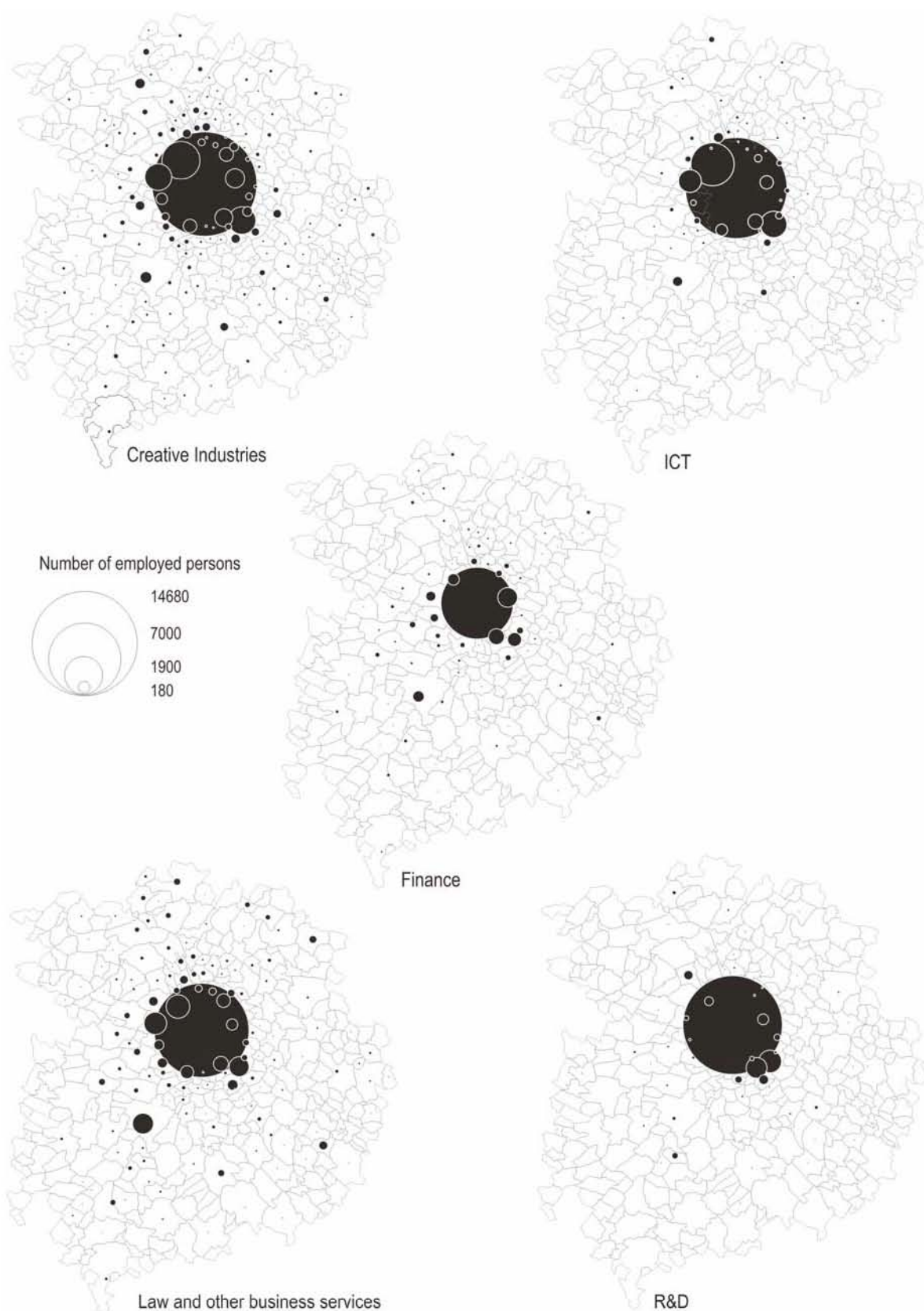
Source: INSEE National Census, 1999 * This sector corresponds to portions of sectors 524 and 525, in which Arts/Antique trade is included. As no sub-categories were available other categories of retail sales of second-hand goods are included as well

Figure 5.1 Spatial distribution of employment in creative and knowledge-intensive sectors in the UAT (1999)



Conception: F. Desbordes

Figure 5.2 Spatial distribution of employment according to creative and knowledge-intensive sectors in the UAT (1999)



Source : INSEE, RGP99
 Conception: F. Desbordes

Higher metropolitan employment in the UAT in 1999 also shows the high degree of specialisation in research and business services (Table 5.3). Toulouse ranks 3rd among the first 50 urban areas in France in 1999 in terms of higher metropolitan employment after Paris and Grenoble. The share of higher metropolitan employment has increased from 10.4 per cent in 1990 to 12.0 per cent in 1999.

The spatial distribution of employment in creative and knowledge-intensive sectors shows a high concentration in the central city of Toulouse and the adjacent suburbs (Colomiers, Blagnac, Balma, Labège among others) (Figures 5.1 and 5.2). This corresponds to major industrial and business clusters and university and research centres.

Table 5.3 Higher metropolitan functions in the UAT (1999)

Metropolitan functions	Per cent of metropolitan functions
Art	5.1
Bank, Insurance	4.0
Research	29.8
Trade	9.2
Commercial in industry	4.3
Management	5.2
Business services	28.3
Telecommunications	4.1
Transports	4.8
Computer activities	3.5
Information	1.7
Total	100.0

Source: INSEE National Census, 1999; INSEE, 2003

5.1.1 Cultural industries

According to the 1999 figures creative industries represent 6.2 per cent of the working population in the UAT: architecture represents 1.7 per cent, followed by video, film, music and photography (1.1 per cent). Other sectors account for less than 1 per cent of the working population. In terms of metropolitan employment art (artists and art craft) amounts to 5.1 per cent of higher employment.

We present a qualitative analysis of cultural policies and cultural supplies with a focus on music as there is a trend towards strengthening cultural activities in Toulouse in the central city and in the suburbs.

❖ *A cultural supply partially driven by public policies*³⁸

Major changes have occurred in the field of culture since the year 2000 in terms of infrastructure and facility provision, public policies and local cultural dynamics. Cultural activity is also expanding over a larger territory: it is spreading in the peripheral areas of the central city and in the suburbs (Sibertin-Blanc, 2004).

³⁸ Text written by M. Sibertin-Blanc, translated and edited by E. Peyroux.

- ***The creation of a regional cultural pole in the city of Toulouse***

Since the 2000s the city of Toulouse has been engaged in a strategy based on the creation of large-scale cultural facilities with the aim to attract a large audience. This is a way to catch up with the perceived lack of facilities for a city as large as Toulouse. These policies are driven by the ambition of making Toulouse a ‘European Capital of Culture’ in 2013.

Until the late 1990s cultural supply in Toulouse was considered as extremely classical (opera, classical orchestra of the Capitole, fine arts museum) and with low-level equipment. This situation has been acknowledged by different observers and by the municipality of Toulouse itself. The year 2000 demonstrated the willingness of the municipality to develop a cultural infrastructure more suitable for a large city such as Toulouse (it had remained limited compared with cities of similar size). An adaptable concert hall (le Zénith) with almost 10,000 seats was constructed as well as a museum for contemporary art (Les Abattoirs) and a large-scale national theatre (le TNT). One should stress here that the explosion of the chemistry firm in Toulouse in 2001 had an impact on the development of infrastructures and on cultural life in general, in particular in reducing private or community initiatives (Sibertin-Blanc, 2004a).

In the early 2000s promotion of cultural events, which was also left behind in Toulouse compared with other cities, formed part of cultural policy. Three large-scale festivals were initiated: the *Rio Loco* Festival (formerly known as *Festival Garonne*) in the field of music, the *Printemps de Septembre* Festival in the field of visual arts, and a reading festival, the *Marathon des Mots*. The last two festivals were not initiated at local level: the *Printemps de Septembre* already existed in Cahors, the *Marathon des Mots* is a private initiative.

At the same time there has been a widening of cultural areas of intervention and a diversification of sectors, in particular towards new musical types or circus art. This also included support to previously neglected private or community structures such as La Grainerie, a nationally known organisation in the field of art circus, L’Usine, a nationally and internationally known organisation for scenery and streets art, or Mixart’Myrys, a self-managed association of various art groups and associations and to art creation (Cabaup, 2003).

New infrastructure and equipments and the emergence of new cultural places have therefore strengthened local cultural life (see Table 5.4A in appendix for details about ‘places to go, things to do’). Cinematographic facilities are a relevant example of interventions designed to enhance metropolitan functions in the central city of Toulouse. The Departmental Observatory for business equipment in Haute-Garonne has been engaged in a project designed to diversify the supply and development of high standard infrastructure (Observatoire départemental de l’équipement commercial de la Haute-Garonne, Schéma de Développement Commercial Aire urbaine de Toulouse, 2005).

- ***Territorial valorisation and distinction through culture in the suburbs: The emergence of secondary poles (Sibertin-Blanc, 2003)***

Municipalities in the suburbs also seek to invest in cultural facilities and events in order to avoid being qualified as ‘dormitory cities’. Suburbs compete with each other to attract

residents, businesses and firms. Culture is seen as means to give value to the urban territory and to create local identity. They are seeking to differentiate themselves by creating attractive cultural places well known in the agglomeration. Competition between peripheral areas is stronger than competition with the city of Toulouse.

In the Toulouse agglomeration (a smaller unit than the urban area, but larger than the city of Toulouse) cultural initiatives had started to develop in the late 1980s but in a very disparate manner. It was, however, not until the late 1990s or the early 2000s that a real dynamic could be observed, with the creation of departments for cultural affairs in all municipalities, the promotion of policies that went beyond a close-at-hand supply and a renewed interest in creativity (Sibertin-Blanc, 2004b). There is a political will to develop an ambitious cultural policy able to attract a clientele outside the municipal boundaries.

Blagnac, a commune of 20,000 inhabitants, which accommodates the international airport and many economic activities, stands as a relevant example of such policy. Created in 1989, Odyssud is a large concert hall financed at 90 per cent by the local municipality that attract people from all over the urban area. Colomiers, the second city in size in the Haute-Garonne *Département* has created two festivals (a comics festival and a biennial iberic music festival) with a large audience within the region itself. Other examples of cultural initiatives include a Cuban music festival in Castanet, a street show and a programme targeted at youths in Ramonville.

Tournefeuille is the city that had one of the most acknowledged and well-known cultural policies, even at national level. Major achievements include high quality local facilities (media centre, art school), policies in art education and dance creation, and an original programme in a community hall, which should be turned into a real concert hall. A partnership between the municipality of Tournefeuille and artists living in the city has been set up with the help of the cultural department and the vice-mayor (a scenery association for instance works together with *Royal de Luxe*, an internationally known street theatre company, which was initially based in Toulouse but moved to Nantes for political reasons). Private initiatives have also been stimulated, in particular in the sector of cinema (*Cinéma Utopia*) and music (programming and festival organised by *Première Pression*, an association specialising in concert and festival organisations). Ramonville, a city located in the UAT also illustrates the development of new cultural policies.

- ***Promoting a close-at-hand cultural supply to meet resident needs in the periurban area***

Peripheral areas, with a fast growing urban population, have favoured the creation of nearby facilities such as libraries or media centres, municipal art and music schools that also attract neighbouring residents. This can be explained by the rapid and late urbanisation of periurban areas (some of them have had their population doubled in 10 years or even multiplied by 10 in 30 years). Local authorities invested in primary infrastructures and social services rather than in cultural facilities. When there was a demand for culture, this was for local facilities. Local authorities also have limited financial means to invest in culture and low organisational

capacities (lack of specialised and dedicated culture personnel such as a director of cultural services; complexity of administrative procedures to get public subsidies).

Finally, one should stress that cultural development is supported at national level through the label ‘City or Region of Art and History’ granted by the Ministry of Culture to municipalities that are actively promoting cultural heritage. This policy is supported by the DRAC (AUAT, 2006h). Midi-Pyrénées Région is also more and more involved in culture through a territorial approach to cultural policy (cultural development schemes). These schemes are supported by State decentralised institutions, which are involved in coordination, consulting, and expertise and research.

Growing involvement of local stakeholders in the field of culture raises issues about the coherence of local initiatives. One should stress again that all local authorities, from municipality to region, have to define a cultural policy and responsibilities in that field are increasing. The development of cooperation at inter-communal level (see section 6) might contribute to more policy coherence although culture has not been delegated to inter-communal institutions.

❖ *Musical supply in the urban pole of Toulouse*³⁹

▪ **Places for music creation, production and diffusion**

There are numerous places used for music creation, production or diffusion in the urban pole of Toulouse⁴⁰ offering a large variety of uses⁴¹. They are often specialised according to music types (classical music, rock and hip-hop, electronic music, etc.). Their capacities vary greatly. These places are highly concentrated in the city of Toulouse (70 per cent of recording and rehearsal studios are located there), mainly in peri-central areas (Nicolas, 2005). Polygone, a well-known recording studio located in Blagnac, a town adjacent to the city of Toulouse, makes an exception. Theatres and the most prestigious facilities for classical music are located in the inner city of Toulouse. Facilities for amplified music⁴² on the contrary are located in the peri-central areas or in peripheral towns of Toulouse. There are, however, numerous small-scale non-conventional places for music performance in the inner city (cafés-concerts, bars, polyvalent halls). But they are inconvenient, only occasionally used and mainly attract a clientele from the neighbourhood, often students who are used to going out in such places. Although these places are not really suitable for amplified music this is where the essential part of this music is performed, mainly by non-professional artists.

The dispersal of musical places results in a polycentric organisation of space that contributes to the fragmentation of the urban territory. The overlapping of public and private activities,

³⁹ Text written by S. Balti, translated by E. Peyroux.

⁴⁰ The urban pole of Toulouse is smaller than the urban area. It was composed of 72 communes in 1999.

⁴¹ This includes specialised facilities (rehearsal and recording studios, concert halls), theatres, auditoriums, modulable halls, cultural centres, community halls, bars-clubs, bars, restaurants, and business premises.

⁴² The community hall of Ramonville, Havana Café, Foyer Roger Panouse, Salle Nougaro, la Mounède, le Confluent, le Bijou.

little involvement of the city of Toulouse, and the lack of coordination or even complete absence of consultation among music stakeholders can explain this situation. The scattering of music places was strengthened after the explosion of the AZF chemical firm. Following this catastrophe the municipality of Toulouse did not provide sufficient guarantees for rebuilding the Bikini, one of the major concert halls in the Toulouse area, which was destroyed by the explosion of the firm. Only episodic concerts are organised in various substitute places. This change in concert organisation has disrupted the practices of the regular clientele of the Bikini and reduced the frequency of concerts, slowing down local activity. This precarious situation did not generate the expected reactions by the musicians who were already experiencing growing difficulties (Sibertin-Blanc, 2004).

▪ ***Cultural policies dedicated to music***

As indicated earlier the city of Toulouse always favoured traditional and prestigious music, which promoted a positive image of the city. Supporting major local facilities and organising festivals were the two pillars of music policies⁴³. The Théâtre du Capitole and the Halle aux Grains, two emblematic equipments, located in the inner city, receive a large share of the municipal budget. The national and international reputation of the Orchestre National du Capitole, situated in the Halle Aux Grains, has been established over the years and the Orchestra now stands as the showpiece of cultural policy in Toulouse. Since 1999, the Zénith, the second largest concert hall in France after Paris-Bercy, has become a must for French and international variety artists. In a context characterised by competition between towns within the urban area such municipal initiatives contribute to promoting the city of Toulouse and ensuring regional or even national attractiveness.

However, no real cultural policy to support music has been conducted at municipal or inter-communal level. Moreover there is some budget discrepancy between on the one hand classical and amplified music, and on the other hand ‘institutionalised’ and ‘alternative music’. This ‘Excellency policy’ tends to neglect open air and creative places and either does not benefit, or only provides little benefit, to local artists. As an illustration, the city of Toulouse has no public facilities dedicated to amplified music. The construction of the Zénith in the 1990s can be seen as a way of catching up with the lack of facilities. But the impact of this large-scale concert hall on local activity is rather limited since only artists able to attract 9,000 spectators are invited. There is a lack of small and medium size facilities such as concert halls, rehearsal and recording studios, meeting places for artists that would allow independant or semi-professional artists to have more space for expression and better working conditions. A few municipalities from the peripheral areas of Toulouse used this opportunity to develop their own activity in order to strengthen their position in local cultural life. Local elected officials have granted the right to use a community hall, la Grande Halle, for regular variety concerts targeted to people at large and they are directly involved in art programmes. Ramonville and Tournefeuille have succeeded in attracting two well-known and skilled firms of Toulouse: the Bikini and Première Pression. In addition these two local authorities will

⁴³ Toulouse d’Été, Piano Aux Jacobins, Toulouse Les Orgues, the Grands Interprètes for classical music; Rio Loco, Siestes électroniques for amplified music.

provide two venues with high-tech equipment for amplified music and with a capacity of 1,500 seats.

There was however a recent change: a municipal department of “Urban Cultures” has been established in Toulouse in 2004. The objective is to support creation and diffusion of emerging culture. This new service departs from previous cultural policy, or represents a reorientation of policy that seeks to catch up with the lack of support to new forms of artistic expression. Major projects are being carried out⁴⁴ and indicate a new approach of public policy towards amplified music.

The Midi-Pyrénées *Région* and the Haute-Garonne *Département* also take part in financing key equipment⁴⁵ and festivals⁴⁶. These local authorities are well aware of the diversity of artists, associations and music events and position themselves as bridging gaps in order to spread art through the whole territory. The objective of the Conseil Général is to facilitate access to music for a large audience. Policy measures include strengthening education (through music schools and the Conservatory of the Region), a financial contribution to some performances (through buying part of the entry tickets) and a participation in art coproductions (Les Grands Interprètes, Spectacles Odyssud, Piano aux Jacobins). As far as the Regional Council is concerned, it has entered into partnership with federated associations that promote music diffusion and support to regional artists through the ‘Opéra Eclaté’, organised for the diffusion of lyric artists, and ‘Avant-Mardi’, a regional place for Actual Music. The region also subsidises a number of structuring activities linked to amplified music at regional level. This includes half a dozen of places within the agglomeration of Toulouse.

▪ ***The independent network: A booming environment for creativity***

Artists and the audience have long shared feelings about being ‘neglected’ by public policies. Despite the fact that few local policies were dedicated to music and despite a rather limited supply, art life in Toulouse is rich and diversified. There is a booming environment for creativity that benefits from a large population of young people and the high number of students (over 100,000). Numerous private initiatives from professional and amateur artists, music and art lovers, social activists, businessmen, small-scale organisations succeed in animating local life outside institutional boundaries. These activities rely on a dense sector of associations composed of artistic organisations and specialised associations working in music diffusion, production and rehearsal. Confronted by the lack of public supply and a hostile environment, associations have become an indispensable instrument for joining forces, allowing stakeholders in the field of music to create synergy and combine competences and financial means. This made it possible to get out of social isolation and have a sustainable

⁴⁴ In 2005, Jean-Luc Moudenc, Mayor of Toulouse, has announced that an old movie theatre in the inner city would be rehabilitated to host rehearsal studios and a concert hall.

⁴⁵ The *Département* co-finances the Zénith, the Auditorium Saint-Pierre des Cuisines et the Théâtre du Capitole. The *Région* has entered into an agreement to support the Orchestre National du Capitole and the Orchestre de Chambre de Toulouse. It also financially contributed to the reconstruction of the Bikini.

⁴⁶ The *Département*, assisted by the association ADDA 31, organises the festival ‘Jazz sur son 31’, which is one of the largest events in the art saison in Toulouse. The *Région* allocates subsidies to other festivals such as Cuba Hoy, les Siestes Electroniques, Les pêcheurs de Thons.

impact on the city. These independent stakeholders vis-à-vis institutional organisations and the ‘star-system’ call for solidarity and interdependency. They generate a collective life organised around cooperation and mutual aid networks but there are also tensions and conflicts. Some associations in Toulouse (*les Motivés, le Couac, Antistatic*) have initiated and organised collective discussion with artists and residents to question the place of art in the city and what is at stake behind participation. For some artists, associations enable them to exist and organise themselves outside the public sphere. For others, this provides a means of expressing their demands to institutions and media more efficiently. This ‘alternative’ network has become an intermediary between stakeholders who usually work in different sectorial fields. This network supports music activities in Toulouse and succeeds in keeping up an art dynamic despite a the lack of suitable local environment.

5.1.2 ICT

ICT manufacturing and ICT services had approximately the same share of working population in 1999. The most important sub-sectors are telecommunications (2.1 per cent of working population), hardware consultancy (0.8 per cent), manufacture of electronic valves and tubes and other electronic components (0.7 per cent) and manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy (0.7 per cent) (see details in Table 5.1A in appendix).

Other data available on employment in ICT shows that in 2004 computer industry was the most developed sub-sectors in the UAT in terms of salaried staff (Table 5.5).

Table 5.5 Distribution of salaried employment in ICT in the UAT in 2004

Sub-sectors	Electronics	Computer activities	Telecommunications	Total
Number of staff	7,339	15,334	6,711	29,384
Per cent	25.0	52.2	22.8	100.0

Source: AUAT, 2006c

The computer industry is characterised by strong processes of territorial agglomeration. The following qualitative analysis shows the nature of clustering and its role in fostering the circulation and transfer of knowledge.

❖ *Clustering of computer firms in the UAT⁴⁷*

The notion of ‘clusters’ relates to a geographic concentration of interconnected companies and institutions in a particular field: suppliers of specialized inputs and infrastructure, customers, manufacturers of complementary products, governmental institutions, universities and research centres and trade associations (see section 3).

The computer industry in Toulouse is structured around SMEs and is deeply rooted in the regional environment through three main components: the labour market; a system of commercial and non commercial transactions between firms; and a local set up of public

⁴⁷ This text is based on the work of M. Grossetti, J.M. Zuliani and A. Scott.

institutions and community-based or professional associations targeted at technological and industrial valorisation (Scott, Zuliani, 2006).

The integration of these three components within the UAT results in an efficient economy of proximity and feeds an on-going flow of positive externalities. In that regard, although the historic and economic development of Toulouse is very specific, it can be compared with other metropolitan areas where a large concentration of computer activities can be found (Boston, Dublin, Lyon, Munich, Oslo and Randstad) (Scott, Zuliani, 2006).

The computer industry in Toulouse is therefore sustained by the following elements:

- A large local pool of highly trained workers composed of engineers and computer specialists

This workforce is highly qualified: 60 per cent of the workforce in computer industry in Toulouse are experienced engineers as opposed to 12 per cent of non technical employees working in marketing, sales and management. The share of engineers among waged workers is higher in firms connected with the aeronautical and space sectors.

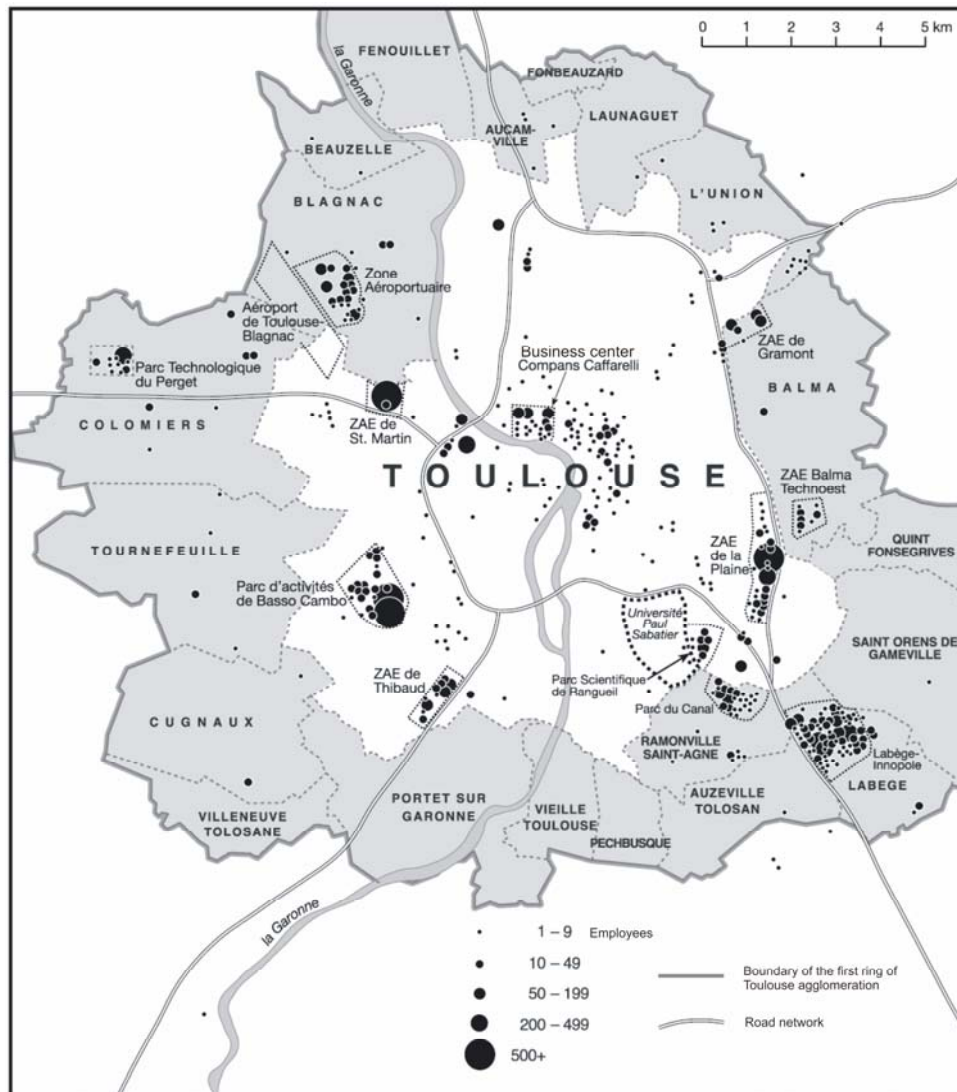
- A large local education and research system in computer activities (see section on higher education and R&D)

The highly qualified workforce is supplied by local education and research institutions (see section on higher education and R&D).

- A large density of clustered establishments

Establishments are concentrated in the centre of the urban area. Their location is linked with the geographical distribution of aerospace industries and education and research institutions (Figure 5.3). Small producers of computer services in traditional sectors (management, bureaucrats, communication) tend to be concentrated in the city of Toulouse. Other concentrations are to be found in the periphery of Toulouse. The size of computer establishments remains modest, which means limited internal economies (the average number of salaried staff is 4.6 per cent in the centre of the city of Toulouse and 16.0 per cent in the periphery; 1.9 per cent of establishments have between 50 and 99 salaried staff; 2,3 per cent of the firms have more than 100 salaried staff) (Scott, Zuliani, 2006).

Figure 5.3 Spatial distribution of establishments in the computer industry in Toulouse agglomeration



Source: Scott & Zuliani, 2006

Most of the firms are located in specific areas developed by public authorities (business, industrial and technological parks) or developed as part of real estate developments managed by firms. These clusters are often located close to industrial or research complexes, include aeronautics clusters in the northwest; electronic and computer clusters in the southwest; space computer and biotechnology clusters in the southeast). The multi-nodal logistic platform created by the Haute-Garonne *Département* with the help of private developers also contributes to the strengthening of clusters. Examples of areas with clustered firms include the airport zone (Zone Aéroportuaire), the industrial parks of Basso Cambo and la Plaine, the scientific park of Rangueil and the technopole of Labège. The intensification of links between industries and biotechnologies, pharmacy and medicine activities is also promoted within the Cancéropole project.

One should stress that the largest firms have their headquarters outside Toulouse, mainly in the region of Paris (Capgemini, CS Systèmes, Sogeti, IBM France, Stéria, Alcatel CIT, Informatique, Banques Populaires, Infotel Conseil, SEMA Télécom, and Unilog IT Services).

❖ *Clustering and the diffusion of learning and innovation*

There is considerable information circulating among different stakeholders (industrial end user, computer services suppliers, research and education institutions). More proximity between stakeholders is conducive to more interpersonal knowledge, mutual trust and confidence. Mobility of personnel between different employers and scientific research spin-offs contribute to the circulation of knowledge. Diffusion of learning and innovation also occurs through private firms, which accommodate a number of computer specialist students. It is also supported via research projects conducted by PhD students, often financed through a cooperation agreement with the private sector (CIFRE) (Collinson 2001, Grossetti, 1990).

❖ *Why did spatial clustering take place?*

According to the literature several territorial agglomerations or key clusters have sprung up because of *hard factors* (good supply of raw materials or energy) whereas some knowledge-intensive agglomerations (e.g. digital media) may have sprung because of accumulated knowledge and expertise (Education and research activities), which comprise *soft factors*.

In Toulouse clusters have been created, promoted or strengthened through policies, individual and company strategies. Researchers and politicians have a strong interest in creating and facilitating networks between companies and institutions. Networks became key factors in firm creation and location. According to a survey conducted on the history of 54 innovative firms in the fields of computer activities, electronics, biotechnologies, chemistry and pharmacy, located in various cities in Southern France (Barthe, Beslay, Grossetti, 2006), factors that explain the creation of firms relate to the existence, availability and accessibility of resources and the capacity of the entrepreneurs to mobilise them. Such resources include networks based on geographical, professional or relational proximity; legal, managerial, and technical advisory services, in particular within incubators; financial support and setting up.

❖ *What model of territorial agglomeration applies in Toulouse?*

There are different types of agglomerations according to the ways in which they have structurally been built or constituted (see for instance the typology of Gordon and McCann in 2000). In that regard Toulouse might correspond to the *social-network model* that emphasises the social embeddedness of economic activities and the role of institutions and networks (Harrison, 1992).

5.1.3 Law and other business services

Law and other business services represented 4.6 per cent of the working population in 1999. The most important two sub-sectors are legal, accounting, book-keeping and auditing activities; tax consultancy, market research and public opinion polling, business and management consultancy (2.1 per cent of working population) and labour recruitment and provision of personnel (1.6 per cent) (see details of sub-sectors in Table 5.1A in appendix).

Business services is one of the fastest growing sectors in the UAT (see section 4). Recent trends include an increase in the global level of technical exchange due to a large share of highly qualified services (Table 5.6).

Table 5.6 Distribution of salaried employment in business services in the UAT (2004)

Categories of services	Standard services		Qualified services			Total
	Implementation/ performance and assistance/ counselling	Logistic and transport	Business counselling	Finance, banking, insurances	Technological services	
Number of employment	29,157	9,901	27,724	8,630	26,470	101,882
Per cent of employment	28.6	9.7	27.2	8.5	26.0	100.0

Source: AUAT, 2006c.

5.1.4 Higher education and R&D

Higher education and R&D represent 3.9 per cent of the working population. Higher education represents 1.9 per cent, followed by research and experimental development on natural sciences and engineering (1.5 per cent) and research and experimental development on social sciences and humanities (0.4 per cent) (see details of sub-sectors in Table 5.1A in appendix). The share of metropolitan functions in research (29.8 per cent) also shows the specificity of Toulouse in this field.

▪ Higher education

a) Students

With 113,900 students in 2005-2006, the *Academy of Toulouse* ranks third in France after Paris and Lyon (second when only considering ‘the province’). The Academy of Toulouse is larger than the UAT: it includes 3,020 communes and 8 départements. Higher education is structured around 3 universities and 12 engineering schools. In addition, there are various training and specialised institutions (see Table 5.5) (AUAT, 2006f). Most of education institutions are concentrated in the Toulouse agglomeration but there are delocalised universities in the secondary cities of the Midi-Pyrénées region (Albi, Tarbes, Montauban, Castres-Mazamet among others).

The UAT accounts for 84.2 per cent of the students of the Academy (95,909 students in 2001-2002 and 97,939 students in 2004-2005). This represents 100 students for every 1,000 inhabitants. The UAT is more specialised in university and engineering education than other urban areas in France (Lille, Aix-Marseille, Lyon and Bordeaux) but less than in Montpellier and Rennes (AUAT, 2006f).

Other data are available at the scale of the department: 68.5 per cent of the students in the Haute-Garonne département are registered in universities and assimilated. There is a high proportion of students studying for B.A, M.A and PhD (2nd and 3rd cycle). The universities in Toulouse grant 4,000 master’s degrees and 700 PhD degrees a year; one fifth of the postgraduates come from abroad. Engineering schools and technical institutes are well

represented: they account to 17.5 per cent of the students registered in Haute-Garonne department (Table 5.7).

Table 5.7 Number of students registered in higher education institutions in Haute-Garonne department (2005-2006)

Universities and assimilated (outside engineers)							
Institutions	CPGE	STS and assimilated	IUT	0-1st cycle	2nd cycle	3rd cycle	Sub-total
Number of students	2,818	5,656	3,966	27,111	23,452	12,228	66,757
Per cent	2.89	5.81	4.07	27.84	24.09	12.56	68.56
Institutions	Engineers	IUFM	Private universities	Business schools	Others	Total	
Number of students	7,075	2,357	2,016	3,284	7,407	97,370	
Per cent	7.27	2.42	2.07	3.37	7.61	100.00	

Source: Atlas régional Midi-Pyrénées 2005-2006. Enseignement supérieur. CPGE: Preparatory classes to enrol in 'Grandes Ecoles/Elite schools (after A level). STS and assimilated: Sections for highly qualified technicians. IUT: University Technological Institute. IUFM: University Institute for the training of primary and secondary school teachers. 0-1st cycle: undergraduates (two years university); 2nd cycle: postgraduates (three to four years university); 3rd cycle: postgraduates (five years university, PhD).

Key disciplines taught in Toulouse universities are Social and Human Sciences (21.02 per cent of the registered students in the three universities of Toulouse and in CUFR in Albi), followed by Land and Political Sciences (13.2 per cent), and Fundamental and Applied Sciences (12.94) (see Table 5.9A in appendix).

According to the Shanghai ranking of universities the University of Toulouse 3 ranked between 151 and 200 after Grenoble 1 and Paris 7 in 2003, and between 201 and 300 in 2004 and 2005 (AUAT, 2006f).

Data from the European University Pole indicates that 12,000 students out of the 113,000 students of the Midi-Pyrénées region are foreign students (10.6 per cent). Foreign students mainly come from Africa: Maghreb (31 per cent) and West Africa (10.5 per cent). Europe is the second continent of origin of the foreign students with a majority coming from the EU (Spain, Germany and Italy). China and Lebanon provide the third most important origins of foreign students outside Africa and Europe (AUAT, 2006f).

b) Teaching staff

With more than 3,800 teaching staff the Academy of Toulouse is one of the major centre for research and knowledge in France. The Academy represents 5.4 per cent of the national staff and ranks 4 after the Academies of Paris, Lyon and Lille (AUAT, 2006f).

▪ Research

There are 280 *public research units* in the UAT and in the neighbouring middle-size cities. Public research is structured around centres of excellence: the Paul Sabatier Campus, the House of Human and Society Sciences at the University 2–Le Mirail, the hospital centres of Purpan and Ranguel, the agribusiness pole of the National Institute for Agricultural Research (INRA), the Champollion University.

With about 2,800 full time equivalent researchers in public institutions the *Midi-Pyrénées* region is among the regions in France with the highest number of public researchers after Ile-de-France (Paris), Rhône-Alpes (Lyon) and PACA (Aix-Marseille). Between 1992 and 2002 the growth of researchers in Midi-Pyrénées was among the highest in France (+23 per cent) compared to +20 per cent as a national average. Public researchers in Midi-Pyrénées represent 55 per cent of all researchers. This is higher than the national average but lower than in other regions in France (AUAT, 2006).

Other sources of data indicate 5,900 researchers in the public sector in Midi-Pyrénées region and 6,800 researchers in the private sector. Such figures place the Midi-Pyrénées region at the same level as the Ile-de-France (which includes Paris) in terms of the number of researchers compared to total salaried staff (14 for 1,000 inhabitants compared to 7,7 for 1,000 inhabitants in metropolitan France) (Agence de Développement de la région Midi-Pyrénées, 2006).

▪ R&D

The total number of people employed in R&D in the Haute-Garonne département amounts to 8,700 persons, among which there are 4,140 private researchers. A large share is concentrated in the agglomeration of Toulouse including Labège. The main firms conducting R&D are in the aeronautics, space, electronics and electricity sectors (EADS Airbus, Latecoère SILAT, ASTRIUM SAS, THALES AVIONING, MOTOROLA, ALCATEL SPACE INDUSTRIES), medicine (FABRE research institute) and pharmacy (SANOFI Research).

Midi-Pyrénées region ranks 6th at national level for the number of submitted patents per inhabitant in 2005. Toulouse represents 3.1 per cent of submitted patents in Europe in 1999 (mainly in electronics and electricity and instrumentation). The main firms submitting patents are Airbus France and Siemens (AUAT, 2006c).

5.2 Creative and knowledge-intensive occupations

Data on occupation held at the INSEE (national statistical institute) for the UAT is based on the ISCO-88 and this only enables a partial fit with the SOC (Standard Occupation Classification) codes available in some other countries.

The following procedure was therefore chosen:

- 1) Data on occupations based on ISCO-88 (International Standard Classification of Occupations) codes are presented in the appendix in order to allow for European comparison. All occupations based on ISCO codes are presented, not only the creative and knowledge-intensive ones (see Table 3.11A).
- 2) We selected occupations within the ISCO codes that best fitted the SOC code. As we only had the 3 digit level of ISCO we could not find all correspondence (Table 5.10).

Table 5.10 Creative and knowledge-intensive occupations in the UAT based on ISCO-88 (1999) (own selection)

ISCO codes	Occupations	Number of employed persons	Share of total working population
311	Physical and engineering science technicians	19,189	4.8
214	Architects, engineers and related professionals	14,755	3.7
213	Computing professionals	7,553	1.9
231	College, university and higher education teaching professionals	4,659	1.2
200	Intellectual and scientific occupations (others)	3,886	1.0
312	Computer associate professionals	4,099	1.0
245	Writers and creative or performing artists	2,575	0.6
700	Craft and related workers (others)	2,601	0.6
244	Social science and related professionals	1,109	0.3
347	Artistic, entertainment and sports associated professionals	1,197	0.3
211	Physicists, chemists and related professionals	883	0.2
313	Optical and electronic equipment operators	990	0.2
734	Craft printing and related trades workers	686	0.2
743	Textile, garment and related trades workers	820	0.2
221	Life science professionals	236	0.1
730	Precision, handicraft, craft printing and related trades workers (others)	205	0.1
122	Production and operations managers (ICT)	358	0.1
123	Other specialist managers (ICT)	456	0.1
732	Potters, glass-makers and related trades workers	9	0.0
733	Handicraft workers in wood, textile, leather and related materials	189	0.0
742	Wood treaters, cabinet-makers and related trades workers	189	0.0
744	Pelt, leather and shoemaking trades workers	97	0.0
111	Legislators and senior government officials (ICT)	4	0.0
121	Directors and chief executives (ICT)	23	0.0
131	Managers of small enterprises (ICT)	117	0.0
Total		66,885	16.7

Source: INSEE National Census, 1999

Based on ISCO classifications the main creative and knowledge-intensive occupations reflect the socio-economic profile of the technopole: they are related to technical and engineering work as well as education and research. Occupations related to ICT are dominant. *The total share of creative occupations should be taken cautiously when comparing with other European case studies as not all creative occupations based on the SOC guidelines could be identified.*

3) We used our own national classification of occupations (PROF) and built our own database on creative and knowledge-intensive occupations (Table 5.11, see also full list in Table 5.12A in appendix). We are aware that there is no systematic equivalence with the international and the other national European classifications.

The constitution of the creative occupations in Toulouse based on the national classification was based on the following principles:

- We took into consideration all sectors identified as creative in the guidelines based on the NACE classification.
- We added sectors of activities that were not identified as creative sectors but in which we could find creative occupations based on the SOC classification (manufacture of glass and glass products, manufacture of non-refractory ceramic goods other than for construction purposes; manufacture of refractory ceramic products, manufacture of

furniture, Manufacture of musical instruments, manufacture of jewellery and related articles). In these additional sectors we selected qualified technicians and workers.

- We included managers and senior officials in all creative sectors and not only in ICT as we think professions involved with decision-making are part of the creative groups.

Based on the PROF classification the most important creative and knowledge-intensive occupations are close to the ISCO classification with a larger share of engineers in ICT and education professions. Knowledge-intensive occupations within ICT represent 5 per cent of the total working population (including managers, executives, engineers and technicians).

The detailed French classification allows making a more precise selection of creative and knowledge-intensive occupations, based on level of qualification and sectors of activities, than the ISCO-88 classification at 3-digit level. As a result of this selection process the total number of persons having a creative or a knowledge-intensive occupation is lower than in the case of ISCO classification (42,281 or 11.6 per cent of the total working population).

Table 5.11 The most important creative and knowledge-intensive occupations in the UAT based on French classification (PROF) (1999) (own selection)

PROF Codes	Occupations	Number of employed persons	Share of total working population
3828	Engineers, specialized managers: informatics, (without sales representatives)	6,939	1.7
3411	High-school teachers	6,094	1.5
3415	College, university and higher education teaching professionals	4,017	1.0
4792	Computer assistants and programmers: informatics (without public sector)	4,016	1.0
3421	Researchers (public sector)	3,886	1.0
3821	Engineers & Managers: R&D in electricity and electronics	1,302	0.3
4718	Telecommunication technicians	958	0.2
4793	Laboratory technicians: public research and education	936	0.2
4717	Technicians: maintenance & corrective maintenance: electricity and electronics, automatics	859	0.2
4713	Technicians: studies prior to execution, assays, checks: electricity & electronics	814	0.2
3532	Professional singers and musicians	761	0.2
4634	Technical assistants (employees): graphic arts, fashion, interior decoration	726	0.2
6283	Printing workers	701	0.2
3534	Independent art teachers	642	0.2
3855	Informatics: Sales managers and representatives	614	0.2
3127	Independent architects	586	0.1
4633	Technical assistants: live entertainment, audiovisual (employees, independent workers)	538	0.1
3511	Journalists, deskmen	534	0.1
3533	Professional actors and dancers	521	0.1
4631	Technical assistants: advertising, public relations (employees, independent workers)	517	0.1

Sources: INSEE National Census, 1999

Regarding the concept of 'creative class' such as developed by Richard Florida Toulouse appears to have a large share of the 'Super creative core', which includes a new class of

scientists and engineers, university professors, etc. whose economic function is to create new ideas, new technologies and or new creative content.

5.3 Conclusion

The analysis of the socio-economic profile of Toulouse confirms its high degree of specialisation. The share of the working population within knowledge intensive sectors reflects the image of Toulouse as technopolis: ICT represented 5.0 per cent of employment in 1999, law and other business services 4.6 per cent, and R&D and higher education 3.9 per cent. The distribution of occupations based on the international ISCO-88 classification or on the French PROF classification show the importance of technical and engineering professions, in particular in computer industry, as well as education and research personnel. When considering the concept of 'creative class' such as developed by Richard Florida Toulouse appears to have a large share of the 'Super creative core', which includes a new class of scientists and engineers, university professors, etc. whose economic function is to create new ideas, new technologies and or new creative content. Regarding territorial agglomeration, the computer industry illustrates the clustering processes that are taking place in Toulouse. Structured around SMEs, it is deeply rooted in the regional environment through the labour market, a system of commercial and non commercial transactions between firms, and a local set up of public institutions and community-based or professional associations targeted to technological and industrial valorisation. In that regard, Toulouse seems to match the *social-network model* that emphasises the social embeddedness of economic activities and the role of institutions and networks. Although the historic and economic development of Toulouse is very specific, it can be compared with other metropolitan areas where a large concentration of computer activities can be found (Boston, Dublin, Lyon, Munich, Oslo and Randstad).

Creative industries represent 6.2 per cent of working population but there is no significant concentration in one or more sub-sectors except architecture (1.7 per cent). However major changes have occurred in the field of culture since the year 2000 in terms of infrastructure and facility provision, public policies and local cultural dynamics. The City of Toulouse has been engaged in a strategy based on the creation of large-scale cultural facilities and the initiation of festivals with the aim of attracting a large audience and shaping a positive and attractive image for Toulouse. Cultural activity is also expanding in the suburbs where some municipalities are implementing ambitious cultural programmes, in a context of growing competition to attract new residents and firms. New facilities and the emergence of new cultural places have strengthened local cultural life, but this mainly relies on informal or associate networks of artists.

6 ANALYSIS OF POLICIES FOR IMPROVING COMPETITIVENESS OVER THE LAST 10 YEARS

Following the analysis of the development path of Toulouse as a technopole the policies referred in this section relate to high technology.

6.1 Local administration (players)

As described in the other sections of this report there is no single management unit at the scale of the urban area. Local players include municipalities and inter-communal structures. We will focus on policies implemented by inter-communal structures, as this is the relevant management scale for studying local economic development in the UAT.

Relevant policies conducted by inter-communal structures are mainly in the field of: (i) land and housing policy; (ii) support to the creation and establishment of firms (this includes planning and developing business parks, nurseries for firms or incubators for hosting innovative firms). Local authorities and inter-communal structures are more and more involved with other public and private stakeholders in the field of local economic development (LED) policies (see following sections to get an overview of the range of policies implemented).

Inter-communal structures display different capacities to attract firms and gather information and know-how. The Community of Agglomeration of Greater Toulouse, with about 700,000 inhabitants, includes the wealthiest towns and has a large concentration of industrial establishments, in particular in the aeronautics, space, electronic and even biotechnology and pharmacy sectors. The SICOVAL, with only 60,000 inhabitants, has less economic means even if some LED initiatives can be acknowledged (firm nurseries, organisation of seminars and congresses).

Table 6.1 Overview of main inter-communal structures and local policies for improving competitiveness

Inter-communal structures	Examples of policies and interventions
The Community of Agglomerations of Greater Toulouse (CAGT) 25 communes; 36,643 ha; 600,000 inhabitants	<ul style="list-style-type: none"> • Creation of business park specialising in aeronautics (aeroconstellation); • Creation of free urban zones (see also section 3.2.3) • Support to universities
The Community of Agglomeration of SICOVAL 36 communes in the southeast; 25,000 ha; 68,000 inhabitants	<ul style="list-style-type: none"> • Creation of a technology cluster - technopole toulouse sud-est – with four business parks (labège-innopole the parc du canal, agrobiopole and the vallée de l’Hers) • Support to firm creation and firm establishment through international networking (the IASP, a worldwide network of science and technology parks)

	<ul style="list-style-type: none"> • Creation of firm nurseries (prologue and Prologue biotech) • Creation of a congress hall Diagora and organisation of economic events
The Communauty of Agglomeration of Le Muretain 14 communes; 18,200 ha; 65,000 inhabitants	<ul style="list-style-type: none"> • Project of the ZAC Porte des Pyrénées (planned for 2010) targeted to leisure and cultural activities

6.2 Regional players

6.2.1 Midi-Pyrénées Region

The Midi-Pyrénées *Région* implements a policy based on technology transfer and support to innovative firms. This policy takes place within contractual agreements between the regional authority (Regional Council of Midi-Pyrénées) and the State. Interventions are therefore conducted through State institutions: DRIRE (*Direction Régionale de l'Industrie, de la Recherche et de l'Environnement*), OSEO-ANVAR (*Agence Nationale de Valorisation de la Recherche*)⁴⁸. This is seen as a mutualisation of resources between State and region (Scott and Zuliani 2006). Regional representatives of State institutions have therefore become service providers in consulting and loans suppliers mainly for technological SMEs.

Since 1970 Midi-Pyrénées region has also developed its own institutional framework to support scientific research and technological development. This includes the following initiatives:

- CRRDT (*Comité Consultatif Régional pour la Recherche et le Développement Technologique*) targeted to fundamental and applied research.
- ARDESI (*Agence Régionale pour le Développement de la Société de l'Information*), created in the 1980s to support and promote information technology in the region (high-speed Internet networks between aerospace firms and main research laboratories specialising in computer industry and systems (IRIT, LAAS). This takes place within the framework of PARSIS (*Programmes d'Action Régionale pour la Société de l'Information*) mainly targeted to communication networks and innovative services.
- Other regional public institutions (ADERMIP, 3RT, Miditech) have long worked independently and separately towards technology transfer for innovative firms in ITC.
- *Incubateur Midi-Pyrénées* aims at supporting the creation of innovative firms out of research laboratories through specific funding (*'fonds d'amorçage de Midi-Pyrénées'*).
- *Agence Midi-Pyrénées Expansion* manages scientific monitoring and supports activity development in several fields (ICT, biotechnology, aeronautics)
- AVAMIP (*Agence Régionale de Valorisation de la Recherche*) provides support to high technology start-ups created through industrial valorisation of technological innovation (incubator).

⁴⁸ Anvar (also called 'Agence française de l'innovation'), was created in 1968 as a state agency for improving the transfer of scientific research results to business. It was transformed into a private company in 2005 and is now part of the OSEO Group, together with BDPME (Development Bank for SME's).

Due to the risk of overlapping of competences the Regional Council has recently created an ARI (*Agence Régionale de l'Innovation*) in charge of coordinating regional policy in technology transfer and support to technological innovation (2006).

6.2.2 Cross-regional projects

The *Pôle de Compétitivité* ‘Aéronautique, Espace et Systèmes Embarqués’ (Aeronautics, Space and Airborne Systems) created in 2005, stretches over Aquitaine and Midi-Pyrénées regions. ‘*Pôle de compétitivité*’ or *competitive cluster* is a recent strategy developed by the State and implemented by DIACT (*Délégation Interministérielle à l'Aménagement et à la Compétitivité des Territoires*)⁴⁹ to support technological innovation (see section 1). It comprises a large geographical perimeter where firms and research and education units are engaged in a partnership, in order to promote common technological projects. This *cluster* includes aeronautics and space activities, computer industry and electronics for airborne systems (transport, mobile phones, medical implants). It is supported by an association named ‘Aerospace Valley’, which has 620 industrial and institutional partners. Headed by the director of Airbus France (Toulouse), the managing board comprises 33 members, representing the different sectors and territories in Midi-Pyrénées and Aquitaine regions.

6.3 Framework of analysis

6.3.1 Strategic intentions

❖ *Local Economic Development Strategies*

Policies for improving economic competitiveness over the past 15 years have focused on high technology activities, in particular through the creation of *centres of excellence* and the reinforcement of R&D activities.

Policies have been based on two key principles;

- Strengthening of the local productive system, which is structured around the key sectors of aeronautics, space and electronics, and computer activities.
- Promoting diversification strategies towards airborne systems and biotechnologies applied to health (cancer treatment). Airborne systems benefit from the availability of a highly qualified workforce from the aeronautics, space and electronic complex.

LED measures aim more at creating territorial resources through the intensification of relationships between existing firms than seeking the establishment of new firms. Attention is paid to increasing cognitive competences in order to foster knowledge circulation.

Two different though complementary periods can be observed in LED. The first one has been characterised by fragmented initiatives and multiform competition (see 6.3.4). However, this did not prevent industrial enterprises from launching initiatives to share means and resources.

⁴⁹ DIACT, former DATAR (*Délégation à l'Aménagement du Territoire et à l'Action Régionale*), prepares, launches and coordinates territorial policies initiated by the State, with a particular emphasis on an aggressive competitiveness policy.

Since 2005, there has been a trend towards more coordination through specific instruments (*Pôles de compétitivité*, see 6.2.2) involving local public institutions. As LED strategies are implemented by different stakeholders and rely heavily on public-private partnerships, detailed policies and interventions are addressed in the section on institutional arrangements (6.3.4).

❖ *The urban development model and economic and social challenges: the political vision of the city*

The evolution of master plans illustrates the way the urban development model of Toulouse has evolved to meet social and economical challenges. Challenges are especially linked to steady demographic growth (see section 2.1.2).

▪ **The 1998 Master plan**

The master plan adopted in 1998 highlighted the need to take into consideration a wide metropolitan area (it stretched over 63 municipalities). The main objective was to control urban sprawl through the following principles: urban intensification; a balance between housing and employment; a multi-modal transport plan that connects road systems with public transport including freeways, subway, train and bus. The principle of a space-saving management was put forward, in particular the need to link urban development with transport infrastructure planning.

Challenges at the scale of Europe were also addressed in the master plan. Regional transport was an issue with regards to the insertion of Toulouse into the network of the large European cities (see also Tables 3.15 and 3.16). There was a call for implementing major road and railway infrastructures on the axis Madrid-Lyon, to improve the links with Barcelona, and develop high-speed rail lines (TGV) in the South, and toward Paris. Major infrastructural projects and the consolidation or creation of economic centres of excellence in the fields of aeronautics, space, electronic, biomedical and tourism were also advocated.

The 1998 master plan was a major step towards a qualitative approach: it was less functionalist than the previous one, and more oriented towards ecology and social cohesion challenges. Its key principles showed a renewed political and social vision of the city:

- Attention was paid to public areas with pedestrianisation and semi-pedestrianisation.
- Secondary roads (boulevards, avenues, walkways) at the entrances of the city became a major support for urban restructuring through the development of housing, shops, activities and services.
- A 'green and blue' network was planned and demonstrated environmental concerns: it connects the main green and leisure areas following rivers and river banks. The preservation and valorisation of natural heritage is combined with a practical function: there is a continuity between walkways and cycle paths within the agglomeration.
- Sustainable development and quality of life were put forward for the first time.
- The social diversity of territories was acknowledged.
- The need for a steady housing policy was emphasised.

▪ **The current SCOT (Scheme for the Territorial Coherence: see 1.4.2)**

In the 2000's there was a further move towards territorial coherence with the adoption of four SCOT's and an Inter-SCOT for the whole urban area (see section 6.3.3). These documents replaced the 1998 master plan. New criteria emerged: inter-communality, urban solidarity and sustainable development. At that time the UAT stretched beyond the boundaries of the Haute-Garonne *département*. There was a need to take into consideration growing periurban areas, and the relationships between the UAT and the medium-size cities (Saint-Gaudens, Pamiers-Foix, Castelnau, Castres, Albi, Montauban, Castelsarrasin, Auch).

The SCOT, which is a strategic and prospective document, highlights major issues that need to be addressed in the next years.

Prospective questions	Issues to address
Will demographic growth and current population distribution persist?	New attractiveness of neighbouring medium-size cities; repopulation of rural areas; evolution of fertility rate and life expectancy
Is the economic development model of the urban area sustainable?	Viability of local economic environment (excellence sectors, diversification); tertiarisation of the economy, new jobs; need of qualified manpower; ageing population
Is the economic development model of the urban area conducive to social integration?	Difficult match between the needs of local economy, proposed jobs and the level of qualification of the workforce; what attractiveness of the territory for low qualified and unqualified populations? dualisation of labour market (backlog in manpower and high unemployment rate); integration of social housing in the city.
Is it realistic to increase urban density with regard to new ways of life?	Persistence of the individual house model; affordable alternatives (with regard to cost, availability of recreational areas, social environment, social mixity): greater household residential mobility (even instability); old persons returning to inner cities; search for a high quality cultural and environmental life
Is it possible to foster identity and social cohesion?	Youth at risk, old persons, isolated populations; the desire to live with one's own socio-economic group; individualisation of attitudes; migrants accommodation; deterioration of social housing
Does the economic development model allow risks of shortage of resources to be faced?	Need to find alternative resources to petrol; rising need for public transport, new requirements for construction and urbanisation
Are health risks and new health needs taken into consideration?	Risks linked to urban life; need of a balance between rural and natural space; ageing population, people at risk

Source: AUAT, 2006i.

6.3.2 Creative/knowledge city philosophy

It is difficult to talk about a creative/knowledge city philosophy in general, and for Toulouse in particular. When considering the development path of Toulouse *it appears more as a city of knowledge and technological innovation than as a creative city in terms of art, culture and other creative industries*. Having said that, one should immediately stress that there is no philosophy for the urban area as a whole, even in the fields of knowledge and innovation. As we have seen in the previous sections, the UAT is made of many different *communes* and inter-communal structures with their own economic specialisation, social profile, and their

own vision of local development. As there is no single unit of government at the scale of the urban area we should talk about *strategic visions* rather than about *philosophy*.

Strategic visions can be reconstructed through the analysis of the various initiatives and policies in the field of LED. Economic strategies, implemented by different stakeholders at different scales, point towards the search for national and international competitiveness through promoting centres of excellence. Eventually one way of addressing the issue of ‘philosophy’ for the case study of Toulouse might be to refer to a *vision of excellence driven by high technology, in which highly qualified human capital plays a key role*.

6.3.3 Institutional arrangements

- ❖ *The reinforcement of inter-communal structures: Governance and organisational innovation in the UAT*⁵⁰

The national law on inter-communality (Simplification and Reinforcement of Inter-communal Cooperation) of June 1999 and the law on Solidarity and Urban Renewal of December 2000 have changed the institutional and governance framework (see section 3 for the period 1960s-1990s). Municipalities, which were organised as the ‘District of Greater Toulouse’, formed the new ‘Community of Agglomeration of the Greater Toulouse’. This restructuring was a minimum response to law requirements: the District of the Greater Toulouse did not transform into an ‘Urban Community’, as was the case in other major urban areas in France, although all conditions were met (such transformation included in the 1999 law was an option and not compulsory).

There were more compulsory requirements in the 2000 law: the urbanisation projects of municipalities could be blocked if they did not set up a planning scheme. *The first step was to join 342 heterogeneous municipalities into a common scheme*, called SCOT (*Schéma de Cohérence Territoriale*). At this point of time there were two possibilities: either adopting a single centralised scheme, in which the State and the central city would play a key role, or moving towards a decentralised and federal scheme that would give more manoeuvring room to elected officials. The second solution was chosen and a Conference for the Urban Area was established in 2002 by the State representative under the leadership of various elected officials (Mayors representatives, presidents of inter-communal structures, representatives of the Haute-Garonne *Département*). Following this conference 80 per cent of the mayors affected by the scheme adopted a ‘Charter for the Urban Area’ in January 2005. This charter aims at defining the framework and the method for establishing a spatial planning scheme at the scale of the urban area.

The adopted *federal scheme* (‘scheme in petals’) legitimates the right of the peripheral areas to decide their own planning approach. The urban area was divided into four sections, each with its own SCOT scheme. The four public agencies in charge with the different SCOTs joined within a GIP (Public Interest Grouping) to guarantee coherence. This illustrates the fact

⁵⁰ Text written by J.L. Coll and translated and edited by E. Peyroux.

that the governance of the urban area is no longer based on a centre-periphery opposition characterised by shifting alliances, but on a more polycentric model, which will lead to new alliances. It took 18 months to set up the operational process of the scheme, allowing political discussion and bargaining to take place.

This complex process results in an increased *rationalisation of inter-communal cooperation in the urban area*. This rationalisation takes place at an intermediate scale, between the municipal level and the urban area level. This creates new territorial identities and new forms of governance. The 4 SCOTs give incentives for negotiation and transactions between different institutional levels, therefore opening the way to the expression of organisational creativity. Issues such as economy, transport and housing, which were not dealt with by small municipalities, are now widely debated. This federative approach could be seen as a preliminary phase that could lead to the constitution of an Urban Community, which would meet the national and European ambitions of Toulouse. In the meantime, and despite some tensions and contradictions, Toulouse remains a dynamic urban area (Toulouse is involved in two major 'Pôles de compétitivité' and is leading a strategic project with seven medium-size towns).

While external stakeholders have driven local political culture into a modernisation process Toulouse has proven to be *innovative* with regard to institutional processes: the GIP 'InterSCOT' is the only one of this type in France. This federal approach is less orthodox than classical schemes. It shows flexibility, adaptability and reactivity. There are however limits to such local 'institutional creativity'.

'Institutional creativity', which resulted from interactions and discussions between the agglomerations, is not a *sui generis* characteristic of the UAT: this is a reaction to external incentives. This situation is not new: the urban area, whose ambition today is to reach the status of European metropolis, has long been a small town in a highly centralised country. Any innovative approach had to be acknowledged by the capital city. Local elites close to central power played, and still play, a key role as political relay to provide good conditions for the regional capital to accommodate external impulses.

Acknowledging such potential should not prevent paying attention to time-consuming procedures and complex and sometimes confusing mechanisms. Such drawbacks may give rise to indifference among citizens or it may, at worst, discredit the process. Communication with citizens, which is a way of promoting local democracy, has become a key issue in territorialized public policies.

❖ *Governance in LED*⁵¹▪ **Fragmentation in the 1990s**

In the 1990s economic interventions were characterised by a *high degree of fragmentation*. Public, parastatal, and business linked organisations (Chamber for Commerce and Industry among others) had been active in the field of LED for a long time but their interventions have been strengthened with the development of the technopole. Industries with a high component of R&D and technological services were interweaving in a close manner. The southeastern inter-communal structure SICOVAL was one of the leading players, together with some other municipalities (see sub-section on local players). Most of the measures included land and housing schemes and laid the foundation for the creation of development zones and industry parks. This was supported by major investments in the construction of office buildings by local or external developers.

Volunteer policies at municipal level led to the setting up of firm nurseries, which were temporary structures to host young innovative firms. This illustrates a trend towards economic growth based on clustering around activities with a high R&D component (aeronautics, space, electronic and some segments of biotechnology). At that time however there was still a lack of a concerted inter-communal policy. One exception was the setting up of a structure named ‘Technopole Agglomération Toulousaine’ (SEM TAT) whose objective was to foster a marketing approach and raise external funds. This approach, mainly targeted attracting investment and mobile high technology firms, did not achieve significant results. The existence of SEM was put to an end in the mid 1990s. It was replaced by a structure dominated by Toulouse, while the SICOVAL inter-communal organisation led its own economic action within its administrative territory.

Due to the lack of a strong inter-communal structure regulations between stakeholders in the field of LED were based on *contractual agreements* and subjected to changing alliances (the City of Toulouse for instance could provide support for one economic sector in particular, or a scientific milieu through infrastructure development or events such as seminars and congresses). While local authorities were all involved in the economic field, there was *no concerted reflection or strategy at the level of the urban area*. Municipal and inter-communal structures were (only) implementing local land and housing schemes (this included financing technological or office parks, firm nurseries, industrial buildings). They were also stimulated by common reflections on economic development together with elected officials, industrial entrepreneurs, scientists and bankers.

Following a pioneer initiative in the 1970s (the creation of the CCRRDT) the Midi-Pyrénées *Région* also played a strong role in economic development by financing fundamental and applied research (support to LAAS, IRIT) and organising technology transfer through the CRIIT (see 6.2.1). The state administration was also involved through sectorial policies led by the ANVAR or the DRIRE. Policies were also aimed at financing innovative firms and technology transfer.

⁵¹ Text written by J.M. Zuliani and translated by E. Peyroux.

In the context of fragmented institutional interventions scientific and industrial milieux became progressively organised in an independent manner and joined forces to develop the diffusion and circulation of knowledge. The objective was to create the conditions for reinforcing and renewing clustering dynamics that had started to develop in the computer industry, electronics and more generally in ICT. This illustrates *the strong relationships between the local economic milieu and public academic research*. During this period of time there was a power shift in the Chamber for Commerce and Industry: local businessmen and independent professionals (*professions liberals*), who led the Chamber for a long time, were being replaced by high technology industrial entrepreneurs (1980s). This shift reflected the economic change. This opened the way for creating specialised clubs (LAAS Club in 1992) and supporting highly innovative young enterprises, which sprang from large firms or laboratories.

GIPI (*Groupement d'Innovation pour l'Industrie*) was founded in the late 1970s and included sub-contractors in aeronautics and microelectronics and local firms providing computer services. It aimed at connecting innovative SMEs with public research centres, mainly the LAAS and ONERA, with the help of financial and logistic support from public authorities. The CCIT supports recently created high technology firms. The clubs of firms illustrate the autonomy of businesses and the development of sectoral and corporate strategies. Another club includes the '*Club des affiliés du LAAS*' created in 1991. It is composed of local computing firms and industrial constructors such as Airbus, Alcatel, Alenia Space, Astrium or Siemens (automobile electronics). Firms provide institutional and financial support to the LAAS while the club provides training seminars, support to project proposals, scientific and technical advice, and organises joint response to calls for tenders.

While private initiatives were flourishing the State remained omnipresent in high technology sectors, either directly by controlling leading firms or institutions (Aérospatiale, CNES, Météo France), or indirectly through public commands to the space sector. In the biotechnology sector various plans and devices were launched as well. This included setting up a genome network, which benefited Toulouse as well as to seven other French cities. In the 1990s the first start-ups developed in pharmacy and biotechnology. But initiatives to structure such firms were conducted by researchers, who turned their scientific research results into goods and services. This illustrates once more how socio-economic milieux gained autonomy in a context characterised by the lack of a clear supportive policy.

Following decentralisation laws, whose full effects were observable in the 1990s, regional and local public stakeholders also gained competences and powers in the fields of economy, education and training.

▪ **Towards more convergent and concerted policies in the 2000s**

In 2000 the political power of the agglomeration was reinforced although it remained divided in several inter-communality structures (see above, in the same section). New forms of governance emerged with a *growing influence of private firms*, in particular the large ones.

They have benefited from the active policy conducted by the State and the Region to support industrial development through technological innovation and applied research.

- **Growing influence of private firms**

Private firms and their representative structures as the Chamber for Commerce and Industry of Toulouse aim at promoting business development and at coordinating information. Various clubs of high technology firms were created.

The association '*la Mêlée numérique*' created in 2001 is an example of private collective action. It aims at supporting the development of occupations and activities involving numbers (high speed network, Internet development, computer consulting). A wide range of private and public stakeholders including the Région Midi-Pyrénées supports it. Actions are based on information circulation and concerted decisions between firms and decision-makers. There are also supportive initiatives towards 'start up' (creation of '*Cercle numérique*') in addition to support to clusters of firms (*grappes d'entreprises*) and a project associating stakeholders in numerical economy (*Alliance Numérique*).

Cooperation between scientific research in information technologies and industrial business has intensified since the late 1990s with the foundation of IERSET (*Institut Européen de Recherche sur les Systèmes Embarqués et leurs Technologies*). It was initiated by Siemens (automobile supplier in charge of airborne system and circuits) and the local authorities. IERSET includes industrial leading firms, research centres (ONERA, LAAS) and local and national firms specialising in computer activities. This interface structure aimed at setting up and managing cooperation projects.

- **Industrial and institutional milieux are getting closer**

Whereas laws on inter-communality were paving the way for stronger inter-communal policy the urban area also had to take up the challenge of *developing coherent and concerted public policies* in the field of LED, in particular to foster innovation and research activities within poles and firm clusters. Institutional stakeholders and industrial milieux were getting closer through the implementation of structural schemes and industrial projects. The need to redevelop the former site of the AZF chemistry firm, destroyed by an explosion in 2001, was one of the main challenges. This has been worked out in a context of splintering and even competition between the three inter-communal structures that cohabited in the urban area despite their differences.

The period also saw the growing role of the Midi-Pyrénées *Région*, whose competences extend to the implementation of territorial economic strategies. The 'Pôles de Compétitivité' is an emblematic example of *large-scale projects targeted to improve competitive advantages of high technology clusters and strengthen their territorial basis*. But the search for a wider governance should not obscure power relationships between stakeholders and their room to manoeuvre, in particular within industrial aeronautics, space and electronic milieux, whose weight in terms of employment and activities is significant in the urban economy. Similarly, inter-communal structures also implement their own sectorial and targeted actions.

This move towards more convergence can be analysed through the notion of territorial governance: LED projects are emerging through the building of local compromises between

cooperative or competing stakeholders. The A380 project and the *Competitive cluster* in particular have played a key role in the new modes of territorial governance that developed in the 2000s.

▪ **Building local compromises: The A380 project and the *Pôles de Compétitivité***

The establishment of the A380 assembly line has resulted in bridge building between the main institutional stakeholders at various scales (urban, departemental, regional). The State played a key intermediary role while the Airbus firm took the lead in mobilising its partners for the project implementation. The development of the A380 site over more than 300 ha and its integration into the urban area would not have been possible without the interventions of all local stakeholders: this includes the Community of Agglomeration of Greater Toulouse, which was the contractor, the Regional Council and the Haute-Garonne Département, and the Chambre for Commerce and Industry. The achievement of the Aeroconstellation project demonstrates the pragmatic character of policies to improve competitiveness when confronted with key industrial investment for the local productive system. It also illustrates consensus among public and private local, regional and national stakeholders when dealing with significant projects in terms of wealth and job creation. The Airbus firm and the industrial aeronautics milieu are well integrated into the local administrative apparatus and the local economic sphere. This helps to strengthen their dominant role.

Policies to promote *Pôles de Compétitivité* illustrate the comeback of the State on the industrial and technological scene. State intervention is however based on calls for projects that encourage local institutional and industrial stakeholders to get organised. The philosophy behind *Pôles de Compétitivité* is to bring three partners closer: high technology firms, higher research and education institutions and local and regional public authorities.

As a result the UAT is integrated into two *Pôles de Compétitivité*, one focusing on aeronautics, space and airborne systems, the second one on biotechnologies and health targeted to cancer treatment. These two economic instruments show distinct power relationships between industrial and institutional stakeholders.

- Aeronautics and the space sector have gained considerable room to manoeuvre to organise and strengthen conditions for ensuring their own development. *Pôle de Compétitivité* is not the result of a mere opportunity. It is born out of a long cooperation process between industrial, scientific and institutional partners. Its implementation illustrates the growing importance of large aeronautics and space sector groups within public private partnerships. Public stakeholders and local institutional structures have legitimated the implementation of the project by providing a constant support. Whereas the objective of the *Pôle de Compétitivité* is to increase the competitive advantages of Aquitaine and Midi-Pyrénées Regions in the sector or in aerospace industries one should stress that it is the UAT which will benefit from the potential economies of agglomeration.
- A new large-scale campus project dedicated to higher research and education in aeronautics and space technologies ('Aérospatiale Campus') will provide additional opportunities to join forces around shared interests. It will be built on the former Air France workshops in the southeastern part of Toulouse.

- In the biotechnology and life science sectors the institutional impulse primarily comes from local public authorities. The UAT keeps a dominant position within the region. The president of the Community of Agglomeration of Greater Toulouse, a well-known cardiologist who was also Minister for Health at that time, initiated a ‘Canceropole’ project in 2003 with the support of the medical milieu and pharmaceutical laboratories. This project, focusing on medical, pharmaceutical and biotechnology research dedicated to cancer treatment, was motivated by the need to redevelop the site of the AZF chemistry firm destroyed by an explosion in 2001. This project created the opportunity to combine LED activities with national industrial policies. During this period of time the State was launching the Plan for Cancer and had designated seven sites in France, including Toulouse, where research and development activities would be concentrated. The granting of the *Pôle de Compétitivité* label ‘Cancer Bio Health’ in part of the Haute-Garonne *département* and the Tarn *département* has complemented the Canceropole initiative. The objective is to support existing laboratories and contribute to the structuring of the Canceropole.

It is too early to assess the long-term impact of both the Canceropole and the *Pôle de Compétitivité*. Competition with other urban areas in France that implement projects in the same fields (Lyon and Paris) has to be taken into consideration. Success of the Toulouse area will depend on State and local authorities’ funding, investments from private firms and the capacity for collaboration between public and private research.

LED policies deployed in Toulouse, by implementing public private partnerships, are more and more innovative, in particular in the field of governance. The logics that have been described above show that there are new stable convergent processes between industrial, scientific and institutional stakeholders. However, due to the large number of institutions involved in LED, sectoral and specific dynamics prevail. But they all share the objective of increasing the competitive advantage of high technology industries and services, and beyond that, promoting the intensification of relationships between firms and the production and circulation of knowledge needed for technological innovation. Some of the initiatives such as *Pôles de Compétitivité* complement structural policies at a regional level. The urban area therefore benefits from a regional development strategy without being the privileged space for intervention. One should stress again that the urban area is not a homogenous institutional territory. Institutional interventions in different economic areas are taking place at regional level (Aquitaine and Midi-Pyrénées *Régions* and Haute-Garonne and Tarn *Départements*) but development strategies benefit Toulouse more than any other urban area due to the concentration of technological and scientific activities.

6.3.4 Critical challenges

Critical challenges relate to the evolution of the local productive system, in particular with regard to the restructuring plan of Airbus.

❖ *Perspectives and challenges in high technology activities*⁵²

Advanced airborne systems are opening new development perspectives based on crosscutting competences and knowledge between aeronautics, space and electronics. However despite proximity there is a risk of delocalisation of a number of productive tasks to offshore areas (India, Eastern Europe), in particular the sub-contracting of services in computer management (Scott, Zuliani, 2006).

The following weaknesses have been pointed out:

- The spreading of young firms, which has been one of the driving forces behind the growth of other technopolises, remains under-developed in Toulouse.
- Large numbers of subsidiary companies in the 'hard core' have their headquarters in Paris
- There is a lack, or little entrepreneurialism among the hard core of the complex compared to Grenoble (Grossetti, Bès, 2002).
- There is a lack of providers of venture capital to support the development of young firms.
- There is a lack of mobility of personnel between public laboratories and private firms

On the other hand growth of aeronautics and the revival of European programmes on spatial systems (Galileo) might play an important role in the future development of computer activities in Toulouse.

❖ *Potential impact of the 2007 Airbus restructuring plan*⁵³

The significant delay in Airbus A380 programme and related costs can be seen as an industrial failure. On the other hand other Airbus aeronautics projects are progressing well: the production of A320 stays at a high level; the A330 has a new start; a new A350 project has been launched; the ATR programme is doing well. Paradoxically, current problems do not jeopardise the organisation and structuring of the local productive system. The restructuring Plan 'Power 8', which should lead to the loss of 10,000 employments all over Airbus European sites, might have limited consequences for Toulouse.

The Airbus company is refocusing on its three core activities: aircraft conception, final assembly and commercialisation of activities. This will lead to the reduction of manufacturing activities and to the closing down or the cessation of work at a number of industrial sites in France and Germany, but no factory in Toulouse will be affected. This is even the continuation of a former policy: French sites, and Toulouse in particular, already went through a restructuring process with the emergence of 'partners firms' or 'key/pivot firms'. These firms are taking over the full development of plane modules for the industrial architecture department of Airbus. Power 8 will bring a growing division of technical labour (rising sub-contracting) and a search for low-cost location for capacity functions.

The short-term consequence of this new organisation for Toulouse is a reduction of about 1,000 jobs among financial management, computer and administrative activities in the Airbus

⁵² Text based on ther work of J.M. Zuliani.

⁵³ Text written by J.M. Zuliani and translated by E. Peyroux.

headquarters in Blagnac (called ‘Central Entity’). Airbus-Toulouse should focus more than ever on the function of an ‘industrial architect’, in charge of project conception. This reinforces the position of Toulouse as the site has been specialising in conception and coordination activities (through leading research programmes and research departments, airborne system engineering), assembly and specialised production activities (engine nacelle stub, conception and manufacturing of wiring).

The transfer of assembly lines for the new generation of A320 aircraft (‘new short range’) to Hamburg is planned for the long term. As a result, Toulouse will specialise in assembly activities with long-range airliners and jumbo-jets in (A330, A340, A350 et A380) and Hamburg in medium haul aircrafts in (A318, A319, A320). The question is whether this new distribution of activities will put into question the organisational and coordinating roles of the Toulouse site within the ‘Airbus network-firm’.

As for the local aeronautic industrial cluster, it should not be endangered in the short-term. Local partners (key/pivot firms) could even benefit from growing responsibilities under this industrial scheme.

❖ *Urban development model*

As indicated in the section on strategic intentions (see 6.3.1), a number of issues have been raised regarding current social and economic patterns. Despite demographic and economic growth the UAT has to face major social issues that are closely linked to its economic specialisation. The development of clusters of high technology activities relying on a highly qualified workforce has led to strong territorial and socio-economic disparities between municipal areas, which have the means to attract innovative firms and high income social groups, and other municipal areas with more traditional sectors of activities (see sections on social polarisation). The combination of business parks and housing schemes - specialised ‘Centres of excellence’ being associated with major urban renewal projects– tend to reinforce current patterns of professional specialisation and socio-economic profiles (see section on physical infrastructures/layout of the city). Socio-spatial inequalities that could be seen in the central city are now developing in the peripheral areas as well.

Related critical challenges have already been touched upon in the section on strategic intentions: is the economic development model conducive to social integration? This raises the issue of the professional integration of low qualified or unqualified populations in a highly specialised urban area.

❖ *Comments of the LOP members on the ‘Critical Challenges’*

The following text is a synthesis of the suggestions and comments made by about a dozen of Toulouse Local Partnership (LOP) members on the draft WP2 report presented during the meeting held on February 13th, 2007. They are a significant contribution to the issues addressed in the Toulouse case study but also in the ACRE project as a whole. They may not reflect the point of view of all LOP members nor the opinion of the research team.

- The economic specialisation of Toulouse in aeronautics raises the issue of the fragility of the local industry in the context of Airbus restructuring. However, one could hardly describe Toulouse as a mono-industrial agglomeration. Industry is indeed rather diversified starting with the differentiation between aeronautics and space, which have their own business logics and trends (spatial activities, civil aircraft manufacturing).
- Computer industry is a very dynamic sector linked with the aerospace industry, but it does not solely depend on it.
- As for biotechnology current development appears quite limited; there are many intentions and declarations and few accomplishments.
- The rise of the creative class in the UAT in fields such as high-tech or culture is not supported by public policies. The real dynamism is a societal one and often implies going beyond political norms and frameworks.
- There is some concern about the choice of relevant indicators for measuring the economic impact of cultural activities. Little statistical work has been carried out in the region, with the notable exception of a report on art and music festivals by the Région Midi-Pyrénées. Attention should be paid to the development of professional training and teaching in the cultural field, as a relevant indicator of its economic significance.
- Many local authorities are changing their vision of cultural activities and are moving towards a more extensive definition. The Région Midi-Pyrénées is becoming one of the main players in cultural policy.
- There is a lack of cultural facilities in Toulouse compared with other cities (among them musical); the lack of political support to cultural initiatives has been stressed.
- Emphasis should be put on the dissemination of culture, in particular through art teachers.
- The geography of cultural activities is changing dramatically. Places of creativity are more and more located in peripheral areas. The centre of the city is becoming an 'exclusive' place for prestigious cultural events supported by public authorities, to the detriment of those promoted by associations and individuals. Art diversity in the city could be endangered. A spatial restructuring of cultural supply on the scale of the urban area is necessary.
- Toulouse should be compared with other major urban areas in France in order to put into perspective the way local actors perceive a 'cultural gap' in the city. This gap might be more the result of local perceptions than a reality when compared with other standards.
- Links between economic and cultural 'worlds' have been discussed. The possibility of designing cultural policies in the same way as policies targeted at technological innovation has been mentioned (incubators for cultural activities for instance). Such policy would include a strong support to artist training and art education. The definition of an *operative* concept of creative knowledge, which could apply to both culture and business, is one of the key issues in the research programme. Links between culture and the economy, cultural production and competitiveness must be further explored.

6.4 Conclusion

Policies for improving competitiveness over the past 15 years have focused on high technology activities, in particular through the creation of *centres of excellence* and the reinforcement of R&D activities. Policies have been based on two key principles: (i) strengthening the local productive system, which is structured around the key sectors of aeronautics, space and electronics, and computer activities; (ii) promoting diversification strategies towards airborne systems and biotechnologies applied to health (cancer treatment). Local Economic Development (LED) measures aim more at creating territorial resources through the intensification of relationships between existing firms than seeking the establishment of new firms. Attention is paid to increasing cognitive competences to foster knowledge circulation.

As there is no single management structure at the scale of the UAT, a wide range of stakeholders are active in LED policies and programmes. Policies implemented by inter-communal structures, which have been progressively reshaped to achieve more territorial coherence during the 2000s, are mainly in the fields of land and housing policies and support to firm creation and establishment. This includes planning and developing business parks, nurseries for firms or incubators for innovative firms, mainly in high technologies. The Midi-Pyrénées region implements a policy based on technology transfer and support to innovative firms with the support of the central State. Cross-regional projects (*Pôles de compétitivité/competitive clusters*) are also developed by the State in Aquitaine and Midi-Pyrénées regions on core regional competences (Aeronautics, Space and Airborne Systems). New forms of governance have emerged with a growing influence of private firms, in particular the large ones such as Airbus. But the Urban Area of Toulouse (UAT) faces critical challenges closely linked to its economic specialisation. The development of clusters of high technology activities relying on a highly qualified workforce has led to strong territorial and socio-economic disparities. Is the economic development model conducive to social integration? This raises the issue of the professional integration of low qualified or unqualified populations in a highly specialised metropolis.

CONCLUSION

Compared with other European cities Toulouse presents a clearly identifiable development path based on an early specialisation in high technology (electricity, space, aeronautics, computer activities) and research and higher education. Over the past decades the city has affirmed itself as a technopolis and a knowledge-intensive regional centre. Whereas cities in other parts of Europe had to face critical restructuring processes linked to the decline of heavy industries, Toulouse has been able to follow a steady development path without rupture or major bifurcation. The city has been able to engage in a cumulative process of capitalising on and building on assets in technical and human capital. Core economic specialisation remains in aeronautics, space and computer activities. The development of satellite imagery and navigation can be seen in the continuation of activities generated by the aerospace industry. As result there is no search for a new economic profile, except in the sector of biotechnology and health that are meant to replace chemical industries and diversify the economic base. But these sectors remain in high technology, and R&D. In this respect, Toulouse does not have to 'reinvent itself'.

The share of working population within knowledge intensive sectors reflects the image of Toulouse as a knowledge-based city: ICT, law and other business services, and R&D and higher education concentrate the largest share of employment compared with creative industries (based on British classification). The distribution of occupations shows the importance of technical and engineering professions, in particular in computer industry, as well as education and research personnel. When considering the concept of a 'creative class,' such as developed by Richard Florida, Toulouse appears to have a large share of the 'Super creative core', which includes a new class of scientists and engineers, university professors, etc. whose economic function is to create new ideas, new technologies and or new creative content.

Key distinctive features in the development path of Toulouse can be pointed out. The first one refers to the key role played by public institutions, in particular the central State, in shaping the economic base of the city. The legacy of a highly centralised power concentrated in Paris was perceptible until the 1980's in the fields of LED as well as in urban policies: 70 per cent of activities created in the agglomeration of Toulouse during the 1960s were initiated by the State and depended directly or indirectly from its authority. Delocalisation of space and aeronautics activities and the transfer of public education institutions to Toulouse in particular have been influential in shaping the socio-economic profile of the city. Local authorities, composed of three tiers of government, only gained responsibilities in land settlement, economic development, urban policies or social care in the early 1980s. Decentralisation policies and the emergence of inter-communal structures have resulted in more involvement of local authorities in LED policies over the past two decades.

The second distinctive feature of Toulouse lies in the fact that this development path has been followed without a single administrative management unit operating at the scale of the UAT. Economic and urban development has taken place in a context of highly fragmented political institutions until inter-communal schemes emerged and were structured in the 1980s. During this period of time different planning and management instruments were implemented with no single and coherent vision of the whole urban area. Due to the lack of a strong inter-communal structure, relationships between stakeholders in the field of LED were based on contractual agreements and subjected to changing alliances. Despite some institutional fragmentation political and economic stakeholders were able to grasp economic opportunities coming from the central State. This demonstrates the capacity to meet challenges despite the lack of a single and centralised political scheme. The strengthening of inter-communal structures and the adoption of a federative scheme (SCOT, Schéma de Cohérence Territoriale) in the 2000s has resulted in an increased rationalisation of inter-communal cooperation within the UAT. But this takes place at an intermediate scale, between municipal level (the *communes*) and the level of the UAT. Once more, the UAT does not represent a single and coherent political arena. In addition, some of the initiatives such as *Pôles de Compétitivité* are taking place at regional or cross-regional level. The urban area therefore benefits from a regional development strategy without being the privileged space for intervention. As a result, it is difficult to talk about creative or knowledge city philosophy for Toulouse. One should talk about *strategic visions* rather than about *philosophy*. This is a vision of excellence driven by high technology, in which highly qualified human capital plays a key role.

The third distinctive characteristics of the development path of Toulouse can be seen in the growing influence played by private firms in LED. In the context of fragmented institutional interventions scientific and industrial milieus were progressively organised in an independent manner and joined forces to develop the diffusion and circulation of knowledge. Initiatives were aimed in particular to reinforce the clustering dynamics that had started to develop in computer industry, electronics and more generally in ICT. This included creating specialised clubs and supporting highly innovative young enterprises, which sprang from large firms or laboratories. Over time the LED policies deployed in Toulouse have become more and more innovative, and now rely on public-private partnerships. But while private initiatives were flourishing, the State remained omnipresent in high technology sectors, either directly by controlling leading firms or institutions (Aérospatiale, CNES, Météo France), or indirectly through public commands to space sector.

It is too early to assess the long-term impact of both public and private policies and programmes in LED, in particular the *Pôle de Compétitivité*. Competition with other urban areas in France that implement projects in the same fields (Lyon and Paris) has to be taken into consideration. The success of the Toulouse area will depend on State and local authority funding, investments from private firms and the capacity for collaboration between public and private research.

While it is tempting to consider Toulouse as a success story of a knowledge-based regional centre, one also has to point out critical challenges linked to its economic specialisation. The development of clusters of high technology activities relying on a highly qualified workforce and the associated housing schemes tend to reinforce socio-spatial disparities.

Neighbourhoods predominantly inhabited by highly qualified and well-paid professionals (including migrants from Northern Europe), in the central city as well as in the suburbs, stand in contrast with neighbourhoods with a high concentration of less educated and unemployed people (including migrants from Maghreb). In addition, rents and house prices have been increasing over recent years and middle-lower income households, who cannot afford to access property ownership in the central city and the suburbs, are pushed further away in the sparsely populated and remote periurban areas. Major upgrading and renewal programmes have been implemented to reduce social disparities but despite an increase in public funds dedicated to social housing rental social housing continues to have a very low share of the Toulouse housing stock and social housing remains insufficient while demand is increasing. Is the economic development model therefore conducive to social integration? This raises the issue of the professional integration of low qualified or unqualified populations in a highly specialised urban area.

APPENDIX

Table 1.5A Identification of cultural industries in France by the Department of Studies, Prospective and Statistics (DEPS) of the Ministry of Culture and Communication (2006)

	Sectors	Sub-sectors	NAF code (French classification close to NACE)
Cultural industries			
Publishing	Publishing	Books	22.1A
		Newspapers	22.1C
		Journals and periodicals	22.1E
		Recorded music	22.1G
	Commercialisation of books, records and press		Division 52
Press agencies	Press agencies		92.4Z
Audio-visual	Cinema		92.1 A, B, C, D, F
	Video		92.1G
	Radio		92.2A
	TV		92.2B, D, E, F
Related activities			
Advertising	Advertising agencies	Management of advertising support	74.4A
		Advertising agencies	74.4B

Source: Ministère de la Culture et de la Communication-DEPS, 2006

Table 1.6A Identification of cultural industries by the Institute for Town Planning of the Ile-de-France region (IAURIF)

Sectors	Sub-sectors	NAF code
Cinematographic, audio-visual and Musical activities		
	Cinematographic and video	92.1A,B,C,D,F,G 22.3C 92.1J
	Radio and TV	92.A,B,D,E,F
	Music	22.3A 22.1G
Publishing (books, press), printing	Books	22.1A,J
	Press	22.1C, E 92.4Z
	Printing	22.2A,C,E,G,J

Source: IAURIF, 2006

Table 1.7A Identification of cultural industries by INSEE

Cultural industries	Sectors	Sub-sectors	NAF code (French classification close to NACE)
Publishing and libraries	Publishing	Books	22.1A
		Recorded music	22.1G
		Other publishing	22.1J
Press	Press	Retail sale of books, newspaper and stationary	52.4Z
		Newspaper, journals and periodical	22.1C, E
		Press agencies	92.4Z
Radio and TV			92.1A, 92.2A, B, D, E, F
Cinema and Video			92.1B, C, D, F, G, J
Architecture			74.2A
Visual and performing art and art activities			92.3A, B, D, K
Conservation of legacy			92.5A, C
Conservation of cultural heritage			

Source: Ministère de la Culture et de la Communication-DEPS, 2005a

Table 3.2A Population structure by sex and age in the UAT (1999) (per cent)

Age groups	Men	Women	Total
0-14	8.7	8.3	17.0
15-24	7.4	7.6	15.1
25-49	19.2	19.5	38.8
50-64	7.4	7.8	15.3
65-79	4.6	5.9	10.4
over 80	1.0	2.3	3.5
Total	48.5	51.5	100

Source: INSEE National Census, 1999

Table 3.3A Population structure by main ethnic groups in the UAT (2001)

Nationals as a proportion of total population	EU nationals as a proportion of total population	Non-EU nationals as a proportion of total population	Nationals born abroad as a proportion of total population
95.3	2	3	9

Source: Urban audit, LUZ Toulouse (Urban Area), 2001

The first 10 geographic origins of migrants are the following: Spain, Italia, Algeria, Morocco, Portugal, Tunisia, Germans, Great Britain, Vietnam, Laos (AUAT, 2006h).

Table 3.4A Origin of migrants in the UAT over the period 1990-1999

Total number of migrants (1990-1999)	230,000
Origin of migrants	
National	88.4%
International	11.6%
<i>Europe</i>	45%
<i>Maghreb</i>	26%
<i>Africa</i>	13%
<i>Other countries</i>	17%

Source: Desbordes, Jaillet, Navereau, 2005.

Table 3.5A Population increase composition (natural increase, net migration) in the UAT (per cent)

	1975-1982	1982-1990	1990-1999
Birth rates	12.81	12.64	12.87
Death rates	8.79	8.07	7.45
Natural increase per year	+0.40	+0.46	+0.54
Migration rate per year	+0.61	+1.20	+0.99
Total annual variations	+0.10	+1.66	+1.53

Source: INSEE National Census, 1999

Table 3.6A Education attainment of the population above 15 in the UAT (1999) (per cent)

Currently studying	No degree	Primary degree*	Secondary Degree**	First stage of tertiary education (Bac+2)	Second stage of tertiary education (higher degrees)	Total
15.1	12.7	37.2	12.2	10.3	12.6	100.0

Source: INSEE National Census, 1999 *CEP, BEPC, CAP, BEP; ** Bac, Brevet professionnel.

Table 3.7A Proportion of resident population qualified at level ISCED (International Standard Classification of Education) in the UAT (2001)

Level 1 ISCED	Level 2 ISCED	Levels 3-4 ISCED	Levels 5-6 ISCED
13.44	22.73	12.52	21.79

Source: Urban Audit, LUZ Toulouse (Urban Area), 2001

ISCED 1: Primary level of education (from five, six or seven years of age for four to six years). ISCED 2: Lower secondary level of education (for two to six years with an average of three, either terminal or preparatory to the second level). ISCED 3: Upper secondary level of education (for two to five years either terminal or preparatory to the third level). ISCED 4: No more in use - formerly short term (one or two years) non-university third level education. Presently in ISCED 5. ISCED 5: Non-University tertiary level (formerly more than two years) of education. ISCED 6: University tertiary level of education, first degree, for student having succeeded upper secondary level. ISCED 7: University tertiary level of education, second degree, for student having succeeded first degree university education. ISCED 6 and 7: Some countries do not distinguish between ISCED level 6 and 7.

Table 3.9A Working population according to detailed sectors of activity in the UAT (1999)

Sectors	Number of employed persons	Per cent of working population
<u>A</u> , B, C - Agriculture, hunting and forestry, Fishing, Mining and quarrying		
<u>01</u> - Agriculture, hunting and related service activities	6,153	1.5
<u>02</u> - Forestry, logging and related service activities	521	0.0
<u>D</u> - Manufacturing		
<u>15</u> - Manufacture of food products and beverages	4,619	1.2
<u>16</u> - Manufacture of tobacco products	73	0.0
<u>17</u> - Manufacture of textiles	334	0.1
<u>18</u> - Manufacture of wearing apparel; dressing and dyeing of fur	1,803	0.5
<u>19</u> - Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear	147	0.0
<u>20</u> - Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials	720	0.2
<u>21</u> - Manufacture of paper and paper products	430	0.1
<u>22</u> - Publishing, printing and reproduction of recorded media	3,624	0.9
<u>23</u> - Manufacture of coke, refined petroleum products and nuclear fuel	16	0.0
<u>24</u> - Manufacture of chemicals and chemical products	3,431	0.9
<u>25</u> - Manufacture of rubber and plastics products	1,120	0.3
<u>26</u> - Manufacture of other non-metallic mineral products	1,514	0.4
<u>27</u> - Manufacture of basic metals	872	0.2

28 - Manufacture of fabricated metal products, except machinery and equipment	4,553	1.1
29 - Manufacture of machinery and equipment n.e.c.	2,725	0.7
30 - Manufacture of office, accounting and computing machinery	429	0.1
31 - Manufacture of electrical machinery and apparatus n.e.c.	2,394	0.6
32 - Manufacture of radio, television and communication equipment and apparatus	5,760	1.4
33 - Manufacture of medical, precision and optical instruments, watches and clocks	4,096	1.0
34 - Manufacture of motor vehicles, trailers and semi-trailers	237	0.1
35 - Manufacture of other transport equipment	16,744	4.2
36 - Manufacture of furniture; manufacturing n.e.c.	1,464	0.4
37 - Recycling	340	0.1
E - Electricity, gas and water supply		
40 - Electricity, gas, steam and hot water supply	3,002	0.7
41 - Collection, purification and distribution of water	733	0.2
F - Construction		
45 - Construction	23,169	5.8
G - Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods		
50 - Sale, maintenance and repair of motor vehicles and motorcycles; retail sale of automotive fuel	7,514	1.9
51 - Wholesale trade and commission trade, except of motor vehicles and motorcycles	19,546	4.9
52 - Retail trade, except of motor vehicles and motorcycles; repair of personal and household goods	27,673	6.9
H - Hotels and restaurants		
55 - Hotels and restaurants	14,210	3.5
I - Transport, storage and communications		
60 - Land transport; transport via pipelines	11,165	2.8
61 - Water transport	44	0.0
62 - Air transport	2,449	0.0
63 - Supporting and auxiliary transport activities; activities of travel agencies	5,057	1.3
64 - Post and telecommunications	10,710	2.7
J - Financial intermediation		
65 - Financial intermediation, except insurance and pension funding	5,381	1.3
66 - Insurance and pension funding, except compulsory social security	2,602	0.6
67 - Activities auxiliary to financial intermediation	1,701	0.4
K - Real estate, renting and business activities		
70 - Real estate activities	4,864	1.2
71 - Renting of machinery and equipment without operator and of personal and household goods	1,244	0.3
72 - Computer and related activities	9,007	2.2
73 - Research and development	7,786	1.9
74 - Other business activities	34,656	8.7
L - Public administration and defence; compulsory social security		
75 - Public administration and defence; compulsory social security	40,196	10.0
M - Education		
80 - Education	32,307	8.1
N - Health and social work		
85 - Health and social work	49,639	12.4
O - Other community, social and personal service activities		
90 - Sewage and refuse disposal, sanitation and similar activities	568	0.1
91 - Activities of membership organisations n.e.c.	5,364	1.3
92 - Recreational, cultural and sporting activities	6,778	1.7
93 - Other service activities	4,428	1.1
P - Activities of private households as employers and undifferentiated		

production activities of private households		
95 - Activities of private households as employers of domestic staff	4,472	1.1
96 - Undifferentiated goods-producing activities of private households for own use	-	-
97 - Undifferentiated service-producing activities of private households for own use	-	-
Q - Extraterritorial organisations and bodies		
99 - Extraterritorial organisations and bodies	91	0.0
Total	400,475	100

Source: INSEE National Census, 1999

Detailed data obtained from the 1999 census based on NACE and ISCO was not disaggregated by age and sex. We have to rely on other classification to give some of the requested information.

Table 3.10A Employment according to the main sector of activity and sex in the UAT (1999)

	Total number of employment	Per cent of employment	Per cent of men	Per cent of women
Agriculture	6,300	4	72	28
Manufacturing	61,500	18	74	26
Construction	23,200	6	92	8
Commerce	54,700	13	56	44
Services	254,800	59	47	53
Together	400,500	100	55	45

Source: INSEE National Census, 1999

Table 3.11A Working population in the UAT based on ISCO-88 classification

ISCO-88	Occupations	Number	Per cent of total working population
010	Armed forces	4,595	1.1
1. Managers and senior officials			7.2
111	Legislators and senior government officials	211	0.1
121	Directors and chief executives	601	0.2
122	Production and operations managers	10,132	2.5
123	Other specialist managers	6,096	1.5
131	Managers of small enterprises	11,704	2.9
2. Professional occupations			16.0
200	Intellectual and scientific occupations (others)	3,886	1.0
211	Physicists, chemists and related professionals	883	0.2
213	Computing professionals	7,553	1.9
214	Architects, engineers and related professionals	14,755	3.7
221	Life science professionals	236	0.1
222	Health professionals (except nursing)	7,605	1.9
231	College, university and higher education teaching professionals	4,659	1.2
232	Secondary education teaching professionals	8,624	2.2
235	Other teaching professionals	1,780	0.4
241	Business professionals	528	0.1
242	Legal professionals	1,115	0.3

243	Archivists, librarians and related information professionals	648	0.2
244	Social science and related professionals	1,109	0.3
245	Writers and creative or performing artists	2,575	0.6
246	Religious professionals	219	0.1
247	Public service administrative professionals	7,735	1.9
3. Associate professional and technical occupations			23.7
311	Physical and engineering science technicians	19,189	4.8
312	Computer associate professionals	4,099	1.0
313	Optical and electronic equipment operators	990	0.2
314	Ship and aircraft controllers and technicians	331	0.1
321	Life science technicians and related associate professionals	1,900	0.5
322	Health associate professionals (except nursing)	3,912	1.0
323	Nursing and midwifery associate professionals	8,533	2.1
331	Primary education teaching associate professionals	5,644	1.4
333	Special education teaching associate professionals	2,277	0.6
334	Other teaching associate professionals	3,517	0.9
341	Finance and sales associate professionals	18,957	4.7
342	Business services agents and trade brokers	517	0.1
343	Administrative associate professionals	10,372	2.6
344	Customs, tax and related government associate professionals	8,186	2.0
345	Police inspectors and detectives	202	0.1
346	Social work associate professionals	4,837	1.2
347	Artistic, entertainment and sports associate professionals	1,197	0.3
348	Religious associate professionals	56	0.0
4. Administrative and secretarial occupations			13.3
410	Office clerks (others)	17,014	4.2
411	Secretaries and keyboard-operating clerks	11,748	2.9
412	Numerical clerks	1,154	0.3
413	Material-recording and transport clerks	5,264	1.3
414	Library, mail and related clerks	3,693	0.9
419	Other office clerks	5,413	1.4
421	Cashiers, tellers and related clerks	7,489	1.9
422	Client information clerks	1,323	0.3
5. Skilled trades occupations			12.0
511	Travel attendants and related workers	569	0.1
512	Housekeeping and restaurant services workers	8,704	2.2
513	Personal care and related workers	21,096	5.3
514	Other personal services workers	3,391	0.8
516	Protective services workers	1,928	0.5
522	Shop, stall and market salespersons and demonstrators	12,496	3.1
6. Personal service occupations			1.8
611	Market gardeners and crop growers	4,339	1.1
612	Animal producers and related workers	553	0.1
613	Crop and animal producers	2,031	0.5
614	Professions du forage et assimilées	104	0.0
615	Fishery workers, hunters and trappers	12	0.0

7. Sales and customer service occupations			10.8
700	Craft and related workers (others)	2,601	0.6
710	Extraction and building trades workers (others)	658	0.2
711	Miners, shotfirers, stone cutters and carvers	36	0.0
712	Building frame and related trades workers	8,909	2.2
713	Building finishers and related trades workers	6,668	1.7
714	Painters, building structure cleaners and related trades workers	1,865	0.5
720	Metal, machinery and related trades workers (others)	989	0.2
721	Metal moulders, welders, sheet-metal workers, structural-metal preparers, and related trades workers	1,930	0.5
722	Blacksmiths, tool-makers and related trades workers	2,128	0.5
723	Machinery mechanics and fitters	6,745	1.7
724	Electrical and electronic equipment mechanics and fitters	4,775	1.2
730	Precision, handicraft, craft printing and related trades workers (others)	205	0.1
731	Precision workers in metal and related materials	267	0.1
732	Potters, glass-makers and related trades workers	9	0.0
733	Handicraft workers in wood, textile, leather and related materials	189	0.0
734	Craft printing and related trades workers	686	0.2
740	Other craft and related trades workers (others)	555	0.1
741	Food processing and related trades workers	2,823	0.7
742	Wood treaters, cabinet-makers and related trades workers	189	0.0
743	Textile, garment and related trades workers	820	0.2
744	Pelt, leather and shoemaking trades workers	97	0.0
8. Process, plant and machine operatives			6.9
800	Plant and machine operators and assemblers (others)	1,041	0.3
811	Mining and mineral-processing-plant operators	20	0.0
812	Metal-processing plant operators	680	0.2
813	Glass, ceramics and related plant operators	355	0.1
814	Wood-processing- and papermaking-plant operators	786	0.2
815	Chemical-processing-plant operators	974	0.2
816	Power-production and related plant operators	131	0.0
820	Machine operators and assemblers (others)	17	0.0
821	Metal- and mineral-products machine operators	431	0.1
822	Chemical-products machine operators	306	0.1
825	Printing-, binding- and paper-products machine operators	1,049	0.3
826	Textile-, fur- and leather-products machine operators	1,315	0.3
827	Food and related products machine operators	846	0.2
828	Assemblers	7,194	1.8
831	Locomotive engine drivers and related workers	824	0.2
832	Motor vehicle drivers	9,748	2.4
833	Agricultural and other mobile plant operators	1,821	0.5
834	Ships' deck crews and related workers	13	0.0
9. Elementary occupations			7.4
910	Sales and services elementary occupations (others)	220	0.1
913	Domestic and related helpers, cleaners and launderers	19,065	4.8

915	Messengers, porters, doorkeepers and related workers	2,996	0.7
916	Garbage collectors and related labourers	100	0.0
931	Mining and construction labourers	1,115	0.3
932	Manufacturing labourers	2,282	0.6
933	Transport labourers and freight handlers	3,716	0.9
Total		400,475	100.0

Source: INSEE National Census, 1999

Table 3.12A Full-time and part-time work according to sex at work place in the UAT (1999) (per cent)

Status	Male			Women			Together		
	Full-time	Part-time	Total	Full-time	Part-time	Total	Full-time	Part-time	Total
Salaried staff	44.8	3.3	48.0	27.9	13.6	41.5	72.7	16.9	89.6
Non-salaried	6.8	0.3	7.1	2.7	0.6	3.3	9.5	0.9	10.4
Total	51.6	3.5	55.2	30.6	14.2	44.8	82.2	17.8	100.0

Source: INSEE National Census, 1999

Table 3.13A The share of salaried and non salaried workers in the UAT (1999) (per cent)

Salaried workers		Non salaried workers			
Public sector	Private sector	Independent workers	Employers	Family worker/ family aid	Total
28.2	61.4	5.5	4.5	0.5	100

Source: INSEE National Census, 1999

Table 3.14A Labour force participation rate and unemployment rate according to age and sex in the UAT (1999) (per cent)

Age	Labour force participation rate			Unemployment rate		
	Men	Women	Together	Men	Women	Together
15 - 19	9.0	4.7	6.9	23.6	34.9	27.5
20 - 24	38.8	31.2	34.9	23.2	28.9	25.8
25 - 29	84.4	79.3	81.9	16.5	23.6	19.9
30 - 34	95.3	85.6	90.4	11.9	19.6	15.5
35 - 39	96.8	85.4	91.1	9.4	16.3	12.6
40 - 44	96.4	85.0	90.7	8.3	13.3	10.7
45 - 49	95.9	83.2	89.4	7.5	11.7	9.5
50 - 54	93.4	77.5	85.3	7.7	10.7	9.1
55 - 59	74.1	58.0	65.9	10.9	13.4	12.0
60 - 64	18.4	17.1	17.7	9.2	12.0	10.6
65 and +	1.6	1.0	1.2	0.0	0.0	0.0
Total	63.0	51.7	57.1	11.3	16.8	13.9

Table 4.1A Main employers in the private sector in the Haute-Garonne département (2005)

Firms	Workforce
Airbus	15,500
SNCF	4,000
Société Air France	2,700
EDF	2,500
Siemens Vdo Automotive	2,500
Alcatel Alenia Space France	2,300
CNES	1,900
EADS Astrium	1,900
Freescale Semiconducteurs France	1,900
Connex Toulouse	1,800

Source: CCI, 2005

Table 4.2A Establishment entry rate in the UAT (2001-2004)

Entry rate	National attractiveness index
2.1	45.0

Source: AUAT, 2006c

Establishment rate is the number of entries compared to the number of establishment. Establishment is the place where firm activities are taking place. Firm is the legal or physical entity. It can have different activities in one or more establishments in different places.

Establishment entry is an indicator of the attractiveness of a territory compared to the size of the local economic sectors. The UAT has a relatively low entry rate (2.1 per cent) compared to medium size cities in the Midi-Pyrénées region such as Foix (4.6 per cent), Pamiers (4.3 per cent) and Montauban (4.1 per cent). This can be explained by the fact that the UAT has a large number of existing establishments and a strong endogenous deve

National attractiveness index measures the share of establishments coming from French regions outside the neighbouring ones (outside Aquitaine, Midi-Pyrénées, Languedoc-Roussillon and Provence-Alpes-Côte d'Azur for Toulouse). It measures the capacity of the territory to attract distant establishments.

45 per cent of the establishments in the UAT comes from distant regions.

Table 4.6A Distribution of types of housing in the UAT (1999) (per cent)

Individual house	Flat in apartment building	Old age homes	Other	Total
50.2	47.8	0.3	1.7	100.0

Source: INSEE National Census, 1999

Table 4.7A Distribution of principal residence according to occupation status and number of rooms in the UAT (1999) (per cent)

Occupation status	1 room	2 rooms	3 rooms	4 rooms	5 rooms	6 rooms and more	Total
Owners	0.5	2.0	6.5	17.1	13.9	10.1	50.0
Renters of unfurnished dwelling	6.3	8.7	7.5	6.0	2.3	1.0	31.8
Renters in social housing	0.7	1.9	3.7	3.7	1.1	0.2	11.2
Renters in furnished dwelling	2.0	0.5	0.2	0.1	0.0	0.0	2.9
Occupation of dwelling free of charge	0.4	0.7	1.0	1.2	0.6	0.3	4.2
Total	9.9	13.7	18.9	28.0	17.9	11.6	100.0

Source: INSEE National Census, 1999

Table 4.8A Distribution of households according to types of housing in the UAT (1999) (per cent)

Proportion of households living in houses	Proportion of households living in owned dwellings	Proportion of households living in private rented housing	Proportion of households living in social housing	Proportion of non-conventional dwellings
50.17	49.84	37.16	10.98	2.02

Source: Urban Audit, LUZ Toulouse (Urban Area), 2001.

Table 4.9A Distribution of dwelling according to dwelling type in the UAT (1999) (per cent)

Dwelling type	Total
Principal residence	90.7
Occasional residence	1.0
Holiday home	1.4
Vacant dwelling	7.0
Total	100.0

Source: INSEE National Census, 1999

Table 4.10A Distribution of dwelling according to superfcy in the UAT (1999) (per cent)

< 40 m2	40-69 m2	70-99 m2	100-149 m2	150 m2 and more	Total
13.9	24.9	33.8	21.5	5.9	100.0

Source: INSEE National Census, 1999

Table 4.11A Average occupancy per occupied dwelling and average number of people per private households in the UAT (2001)

Average occupancy per occupied dwelling	2,3
Average size of households	2,34
Proportion of one-person households	34.85%
Total number of households	411,474

Source: Urban Audit, LUZ Toulouse (Urban Area), 2001

Table 4.12A Dwellings per 1,000 persons in the UAT (1999)

Total number of dwellings	Dwelling/1,000 inhabitants
453,851	470,4

Source: INSEE National Census, 1999

Table 4.13A Proportion of dwellings lacking basic amenities in the UAT (1999)

Proportion of dwellings lacking basic amenities	3.6%
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Source: Urban Audit, LUZ Toulouse (Urban Area), 2001

Table 4.14A Distribution of principal residence according to amenities in the UAT (1999)

Types of amenities	Per cent of principal residence	Per cent of resident population
No bath, no shower	0.7	0.4
Bath and shower	1.6	1.4
1 Bathroom	86.6	82.9
2 or more bathrooms	11.1	15.2
Total	100.0	100.0

Type of amenities		
No bath, no shower, no WC	0.4	0.2
No bath, no shower, WC	0.3	0.2
Bath and shower, no WC	2.1	1.9
Bath, shower, WC, no central heating	9.5	11.3
Bath, shower, WC, and central heating	87.8	86.4
Total	100.0	100.0

Source: INSEE National Census, 1999

Table 5.1A Working population according to creative and knowledge-intensive sectors in the UAT (1999)

Sector	NACE codes	Number of employed persons	Per cent of working population
1. Creative industries			
Advertising	744 Advertising	1,787	0.4
Architecture	742 Architectural and engineering activities and related technical consultancy	6,851	1.7
Arts/antiques trade*	<u>Portions of the following sectors:</u>		
	524 Z Other retail sale of new goods in specialized stores	800	0.2
	525 Retail sales of second-hand goods in store	315	0.1
	Sub-total	1,115	0.3
Crafts	No codes	-	There is no such category. Crafts are included in the other sectors
Design	No codes	-	Idem
Designer fashion	<u>Portion of the following sectors:</u>		
	17 Manufacture of textiles		
	171 Preparation and spinning of textile fibres	16	0.0
	172 Textile weaving	36	0.0
	173 Finishing of textiles	20	0.0
	174 Manufacture of made-up textile articles, except apparel	180	0.0
	175 Manufacture of other textiles	38	0.0
	176 Manufacture of knitted and crocheted fabrics	4	0.0
	177 Manufacture of knitted and crocheted articles	40	0.0
	18 Manufacture of wearing apparel; dressing and dyeing of fur		
	181 Manufacture of leather clothes	4	0.0
	182 Manufacture of other wearing apparel and accessories	1,780	0.4
	183 Dressing and dyeing of fur; manufacture of articles of fur	19	0.0
	19 Tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear		
191 Tanning and dressing of leather	16	0.0	
192 Manufacture of luggage, handbags and the like, saddlery and harness	49	0.0	
193 Manufacture of footwear	82	0.0	
	Sub-total	2,284	0.6

Video, film, music and photography	223 Reproduction of recorded media	36	0.0
	921 Motion pictures and video activities	357	0.1
	748 Miscellaneous business activities (*part of it)	3,927	1.0
	Sub-total	4,320	1.1
Music and the visual and performing arts	<u>Portions of the following sectors:</u>		
	923 Other entertainment activities	2,532	0.6
	927 Other recreational activities	200	0.0
	Sub-total	2,732	0.7
Publishing	221 Publishing	1,768	0.4
	924 News agency activities	84	0.0
	Sub-total	1,852	0.5
Computer games, software, electronic publishing	722 Software consultancy and supply	3,335	0.8
Radio and TV	922 Radio and television activities	582	0.1
2. Information Communication Technology (adapted from OECD definition)			
<u>ICT manufacturing:</u>	300 Manufacture of office machinery and computers	429	0.1
	313 Manufacture of insulated wire and cable	144	0.0
	321 Manufacture of electronic valves and tubes and other electronic components	2,937	0.7
	322 Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy	2,781	0.7
	323 Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods	42	0.0
	332 Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes except industrial process control equipment	2,566	0.6
	333 Manufacture of industrial process equipment	406	0.1
	<u>ICT services</u>	642 Telecommunications	4,992
72 Computer related activities (minus 722 Software)			
72.1: hardware consultancy;		3,284	0.8
72.3: data processing;		1,666	0.4
72.4: database activities;		138	0.0
72.5: maintenance and repair of office, accounting and computing machinery;		584	0.1
72.6: other computer related activities;		-	-
Sub-total		19,969	5.0
3. Finances			
	65 Financial intermediation, except insurance and pension funding	5,381	1.3
	66 Insurance and pension funding except compulsory social security	2,602	0.1
	67 Activities auxiliary to financial intermediation	1,701	0.4
	Sub-total	9,684	2.4
4. Law and other business services			
	741 Legal, accounting, book-keeping and auditing activities; tax consultancy, market	8,637	2.1

	research and public opinion polling, business and management consultancy.		
	743 Technical testing and analysis	1,190	0.3
	745 Labour recruitment and provision of personnel	6,596	1.6
	746 Investigation and security activities	2,095	0.5
	Sub-total	18,518	4.6
5. R&D and higher education			
<u>73 Research and development</u>	731 Research and experimental development on natural sciences and engineering	6,233	1.5
	732 Research and experimental development on social sciences and humanities	1,553	0.4
	803 Higher education	7,665	1.9
	Sub-total	15,451	3.9
Total		88,480	22.1

Source: INSEE National Census, 1999 * This sector corresponds to portions of sectors 524 and 525, in which Arts/Antique trade is included. As no sub-categories were available other categories of retail sales of second-hand goods are included as well

**Table 5.4A Places to go, things to do' in Toulouse
Facilities in Haute-Garonne Department (1,156,000 inhabitants, 2005 estimates)**

<ul style="list-style-type: none"> Total places for music, dance and theatre: 199; 65,178 seats (more if people are standing) Among which: <i>Opera: 1; 1,150 seats</i> <i>Theatres: 16; 4,320 seats</i> <i>Concert halls/Versatile halls: 181; 59,508 seats</i> <i>Open air: 1; 200 seats</i> Discotheques: 62 (39 in the city of Toulouse) Restaurants: 2,182 (1157 in the city of Toulouse) Cafés and pubs: 405 (238 in the city of Toulouse) Exhibition spaces and galleries: 48 (41 in the city of Toulouse) Cinemas: 26 in 2003 (among which 3 multicinemas); 81 rooms; 16,600 seats Hotels: 221; 8,900 beds Festivals (Music, dance, lyrics, circus): Among which: Country music, African traditional dance, salsa, Mediterranean and African and Sub-Saharan traditional music: 30 for the 2002-2003 season; 57 registered festivals in Haute-Garonne (mainly yearly)

Urban Area of Toulouse (1,060,000 inhabitants in 2004)

Facilities	Number of facilities	Number of rooms /seats/Beds	Number of seats/1000 inhab.
Cinemas	26 in 2003 (among which 3 multicinemas)	81 rooms 16,600 seats	1,57
<i>4,3 million tickets in 2003</i>			

Sports facilities	3,195 in 2001 <i>Include indoors and outdoors facilities as well as natural sites. Mainly include tennis and 'pala', (regional ball game) courts, rugby and football arenas, specialised halls for collective sports and 'boulodromes' (regional ball game). One has to stress that the nearby Pyrenées also offer a wide range of sport activities (skiing, hiking, rock climbing) as well as the Mediterranean Sea and the Atlantic Ocean (canyoning, surf, sailing).</i>
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Sources: Places for music, dance and theatre and festivals: *Adda 31*. Sport facilities: *AUAT, 2003*. Cinemas and hotels: *Observatoire de l'Équipement Commercial de la Haute-Garonne, 2005*. Discothèques, restaurants and cafés: *Yellow pages, phonebook*.

Tourism

Origin of tourists: 85 per cent are French, 15 per cent are foreigners (in particular Spanish and Italian). Tourism activities in the Haute-Garonne Department occupy the 3rd position right after aeronautics and chemistry and pharmacy industries. In 10 years time tourist consumption in Midi-Pyrénées rose by 25 per cent and reached 1,9 billion euros in 2000. Accommodation expenses accounts for 1 third of the total amount and expenses in shops and local services for the remaining.

Business tourism is well developed due to the wide range of organised congresses and companies' visits: 74,000 visitors for the 'Auto show' in 1999; 200,000 visitors for the Toulouse fair in 2000; 50,000 visitors for the Tourism Fair and the International fair for technique and future energies (SITEF); 40,000 for the Art craft fair and autumns fair; 8,000 for the Wine Fair.

Source: AUAT, 2003

Table 5.9A Number of registered students in the 3 University of Toulouse (Toulouse 1, Toulouse 2, Toulouse 3) and in University Centre for Education and Research Champollion Albi (CUFR) in 2005-2006

Disciplines	Total	Per cent	Variation 2004-2005
Social and Human Sciences	15,113	21.02	151
Law and Political Sciences	9,362	13.02	452
Fundamental and Applied Sciences	9,300	12.94	13
Languages	5,805	8.07	-192
Medicine	5,364	7.46	-108
Economic Sciences and Management	5,334	7.42	-82
Life Sciences	4,923	6.85	245
Humanities - Art – Language Sciences	4,130	5.74	-1,278
IUT Tertiary (DUT)	3,364	4.68	-156
IUT Secondary (DUT)	2,653	3.69	49
Sciences and Techniques of Physical and Sportive Activities -STAPS	2,371	3.30	-173
Applied Foreign Languages	2,137	2.97	-675
Pharmacy	1,304	1.81	-13
Odontology	568	0.79	5
Pluri-Sciences	169	0.24	169
Total	71,897	100.00	-897

Source: SISE Database, 2005/2006, Academy of Toulouse

Table 5.12A Creative and knowledge-intensive occupations in the UAT based on PROF classification (1999) (own selection)

PROF Codes	Creative occupations	Number of employed persons	Share of total working population	Share of creative occupations
3828	Engineers, specialized managers: informatics, (without sales representatives)	6,939	1.7	15.0
3411	High-school teachers	6,094	1.5	13.2
3415	College, university and higher education teaching professionals	4,017	1.0	8.7
4792	Computer assistants and programmers: informatics (without public sector)	4,016	1.0	8.7
3421	Researchers (public sector)	3,886	1.0	8.4
3821	Engineers & Managers: R&D in electricity and electronics	1,302	0.3	2.8
4718	Telecommunication technicians	958	0.2	2.1

4793	Laboratory technicians: public research and education	936	0.2	2.0
4717	Technicians: maintenance & corrective maintenance: electricity and electronics, automatics	859	0.2	1.9
4713	Technicians: studies prior to execution, assays, checks: electricity & electronics	814	0.2	1.8
3532	Professional singers and musicians	761	0.2	1.6
4634	Technical assistants (employees): graphic arts, fashion, interior decoration	726	0.2	1.6
6283	Printing workers	701	0.2	1.5
3534	Independent art teachers	642	0.2	1.4
3855	Informatics: Sales managers and representatives	614	0.2	1.3
3127	Independent architects	586	0.1	1.3
4633	Technical assistants: live entertainment, audiovisual (employees, independent workers)	538	0.1	1.2
3511	Journalists, deskmen	534	0.1	1.2
3533	Professional actors and dancers	521	0.1	1.1
4631	Technical assistants: advertising, public relations (employees, independent workers)	517	0.1	1.1
4626	Sales representatives (business-to-business): business and professional services	466	0.1	1.0
2156	Carpenters and joiners (tradesmen)	445	0.1	1.0
2334	Corporate managers: service industry, (from 10-49 employees)	391	0.1	0.8
3513	Librarians, archivists, conservators: (public sector)	388	0.1	0.8
6761	Non-qualified workers: metallurgy, glass industry, ceramics, building material	373	0.1	0.8
3735	Managers: advertising, public relations	367	0.1	0.8
6261	Qualified workers: metallurgy, glass industry, ceramics, building material	361	0.1	0.8
3831	Engineers & Managers: manufacturing in electricity and electronics	355	0.1	0.8
6331	Skilled carpenters (wood)	313	0.1	0.7
4635	Technical assistants (independent workers): graphic arts, fashion, interior decoration	288	0.1	0.6
6294	Skilled laboratory workforce (without chemistry and health)	281	0.1	0.6
3851	Engineers & sales representatives: electric and electronic professional goods	275	0.1	0.6
6392	Art workers	241	0.1	0.5
2141	Printing and publishing tradesmen	237	0.1	0.5
2244	Independent show managers (small enterprises: 0-9 employees)	235	0.1	0.5
2247	Service-providing professionals (intermediary enterprises from 0-9 employees)	235	0.1	0.5
6282	Typesetters	235	0.1	0.5
4771	Technical assistants (printing and publishing)	217	0.1	0.5
3523	Technical managers: live entertainment, audiovisual shows	216	0.1	0.5
6281	Workers: photo-engraving, photography development, motion picture industry	214	0.1	0.5
6371	Skilled tailors and seamstresses	201	0.1	0.4
2142	Handicraft tradesmen	197	0.0	0.4
2131	Furniture tradesman	189	0.0	0.4

3531	Sculptors and painters	188	0.0	0.4
3535	Variety artists	183	0.0	0.4
2121	Tailors, textile and garments tradesmen	182	0.0	0.4
3521	Managers: press, publishing, audiovisual sector, shows	174	0.0	0.4
3727	Administrative and financial managers: SME's	156	0.0	0.3
6393	Entertainment assistants	156	0.0	0.3
3824	Architects (employees)	151	0.0	0.3
3126	Independent advisors: engineering development	147	0.0	0.3
4624	Sales representatives (business-to-business): capital and intermediate goods	145	0.0	0.3
4636	Photographers (employees)	136	0.0	0.3
2333	Corporate managers: commerce, 10-49 employees	126	0.0	0.3
3733	Sales managers: large enterprises (without retail sale)	120	0.0	0.3
4712	Industrial designer: electricity & electronics	117	0.0	0.3
3726	Managers & assistant managers: other administrative services – large enterprises	110	0.0	0.2
3522	Artistic managers: shows	104	0.0	0.2
6284	Skilled workers: soft binding, binding, forwarding stiff-paper	102	0.0	0.2
4637	Independent photographers	99	0.0	0.2
6399	Skilled handicraft workers	93	0.0	0.2
2320	Corporate managers, medium-sized enterprises (50 up to 499 employees)	92	0.0	0.2
3722	Recruitment and training managers	84	0.0	0.2
3512	Literary authors, script-writers, dialog writers	77	0.0	0.2
3838	Technical managers: printing, publishing	77	0.0	0.2
3810	Technical managers, large enterprises	70	0.0	0.2
3723	Managers: organisation, administrative auditing, finance	69	0.0	0.1
2332	Corporate managers: industry, transport (from 10-49 employees)	68	0.0	0.1
3724	Managers & assistant managers: finance, accounting – large enterprises	52	0.0	0.1
6373	Skilled workers. leather industry	52	0.0	0.1
3734	Sales managers: SME's (without retail sale)	48	0.0	0.1
3842	Engineers & Managers: purchasing, procurement (industry)	48	0.0	0.1
2310	Corporate managers, large enterprises (500 employees and more)	44	0.0	0.1
2132	Tradesmen: sawmills	41	0.0	0.1
3710	Finance, commerce and administration managers: large enterprises	41	0.0	0.1
3732	Marketing, purchasing managers	41	0.0	0.1
4627	Sales representatives (business-to-consumer)	40	0.0	0.1
2122	Pelt and leather manufacturing tradesmen	38	0.0	0.1
3721	Development managers: marketing, financial and economic research	36	0.0	0.1
4711	Chief draughtsman: electricity & electronics	32	0.0	0.1
4625	Sales representatives (business-to-business): consumer goods	20	0.0	0.0
3843	Engineers & Managers: planning, organisation	16	0.0	0.0

6394	Skilled workers, glass and ceramics	9	0.0	0.0
2235	Commerce professionals (intermediary enterprises from 0 to 9 employees)	8	0.0	0.0
3123	Independent tax and legal advisors	4	0.0	0.0
3725	Managers & assistant managers: human resources – large enterprises	4	0.0	0.0
Total		46,281	11.6	100.0

Source: INSEE National Census, 1999

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3RT	Réseaux Régionaux de Recherche Technologique	Regional Technological Research Networks
ADERMIP	Association pour le Développement de l'Enseignement de l'Economie et des Recherches en Midi-Pyrénées	Association for the Development of Teaching Economy and Research in Midi-Pyrénées
ANVAR	Agence Nationale de Valorisation de la Recherche	National Agency for the Development of Research
ANRU	Agence Nationale pour la Rénovation Urbaine	National Agency for Urban Renewal
ARDESI	Agence Regionale pour le Développement de la Société de l'Information	Regional Agency for the Development of the Information Society
ARI	Agence Régionale de l'Innovation	Regional Innovation Agency
AUAT	Agence d'Urbanisme de l'Aire Urbaine de Toulouse	Toulouse Town Planning Agency
AVAMIP	Agence Régionale de Valorisation de la Recherche	Regional Agency for the Development of Research
AZF	AZote Fertilisants	Chemistry firm
BDPME	Banque du Développement des PME	SMEs Development Bank
CAGT	Communauté d'Agglomération du Grand Toulouse	Community of Agglomeration of the Greater Toulouse
CERFACS	Centre Européen de Recherche et de Formation Avancée en Calcul Scientifique	European Centre for Research and Advanced Training in Scientific Computation
CCIT	Chambre de Commerce et d'Industrie de Toulouse	Chamber of Commerce and Industry of Toulouse
CCRRDT	Comité Consultatif Régional pour la Recherche et le Développement Technologique	Regional Consultative Committee for Research and Technological Development
CIFRE	Convention Industrielle de Formation par la Recherche	PhD students' grant through a cooperation agreement with the private sector
CNES	Centre National d'Etudes Spatiales	National Centre for Spatial Studies
CPGE	Classes Préparatoires aux Grandes Écoles	Preparatory classes to enrol in 'Grandes Ecoles'/Elite schools (after A level)
CRAC	Centre Régional d'Art Contemporain	Regional Centre for Contemporary Art
CUCS	Contrat Urbain de Cohésion Sociale	City Agreement for Social Cohesion
DATAR	Délégation à l' Aménagement du Territoire et à l'Action Régionale	Delegation for Regional Planning and Action
DIACT	Délégation à l'Aménagement et à la Compétitivité des Territoires (ex-DATAR)	Delegation for Regional Planning and Enhancing Competitiveness
DIV	Délégation Interministérielle à la Ville	Interministry Delegation for the City
DRAC	Direction Régionale des Affaires culturelles	Regional Department for Cultural Affairs
DRIRE	Direction Régionale de l'Industrie de la Recherche et de l'Environnement	Regional Department for Research, Industry and Environment
DSQ	Developpement Social des Quartiers	Social Development of the Neighbourhoods
ENAC	Ecole Nationale de l'Aviation Civile	National Civil Aviation School
ENSAE	Ecole Nationale supérieure de l'Aéronautique et de l'Espace	National Higher School of Aeronautics
ENSEEIH	Ecole Nationale Supérieure d'Electrotechnique, d'Electronique, d'Informatique, d'Hydraulique et des Télécommunications	National Higher School for Electrotechnics, Electronics, Computer Science, Hydraulics and Telecommunications
ENSICA	Ecole Nationale Supérieure d'Ingénieurs de Constructions Aéronautiques	National Higher School for Aeronautical Engineering
ESPON	Observatoire Européen en Réseau de l'Aménagement du Territoire (Orate)	European Spatial Planning Observation Network
FRAC	Fonds Regional d'art contemporain	Regional Contemporary Art Funds
GDP	Produit Intérieur Brut (PIB)	Gross Domestic Product
GDTA	Groupement pour le Développement de la Télédétection Aérospatiale	Grouping for the Development of Aerospace Teledetection
GELEM	Gay Et Lesbiennes En Marche	Marching Gay and Lesbians
GIP	Groupement d'Intérêt Public	Grouping of Public Interest

GIPI	Groupement d'Innovation pour l'Industrie	Grouping for Manufacturing and Innovation
GPU	Grand Projet Urbain	Great Urban Project
HVS	Habitat et Vie Sociale	Social Life and Housing
IASP	-	International Association of Science Parks
IAURIF	Institut d'Aménagement et d'Urbanisme de la Région Ile-de-France	Ile-de-France Planning Agency
ICT	Technologie de l'Information et de la Communication (TIC)	Information Communication Technology
IERSET	Institut Européen de Recherche sur les Systèmes Embarqués et leurs Technologies	European Research Institute on Airborne Systems
ILO	Office de Travail international (OIT)	International Labor Organisation
INRA	Institut National de la Recherche Agronomique	National Institute for Agricultural Research
INSA	Institut National des Sciences Appliquées	National Institute for Applied Sciences
INSEE	Institut National de la Statistique et des Etudes Economiques	National Statistical Institute
IRIT	Institut de Recherche en Informatique de Toulouse	Toulouse Research Institute on Computer Science
ISCO	-	International Standard Classification of Occupations
IUT	Institut Universitaire de Technologies	University Technological Institute
IUFM	Institut Universitaire de Formation des Maîtres	University Institute for the training of primary and secondary school teachers
LAAS	Laboratoire d'Analyse et d'Architecture des Systèmes	Laboratory for Automatics and System Analyses
LED	-	Local Economic Development
ONERA	Office National d'Etudes et Recherches Aéronautiques	National Office for Aeronautical Studies and Research
PACA	Provence-Alpes-Côte d'Azur (French Région)	
PARSI	Programme d'Action Régionale pour la Société de l'Information	Regional Action Programme for the Information Society
R&D	-	Recherche & Développement
RGP	Recensement Général de la Population	National Census
SCOT	Schéma de Cohérence territoriale	Scheme for the Territorial Coherence
SICOVAL	Syndicat Intercommunal pour l'Aménagement et le Développement des Côteaux et de la Vallée de l'Hers	Local Authority Joint Board/Inter-communal Syndicate for Planning and Developing the Côteaux and the Vallée de l'Hers
SIVOM	Syndicat Intercommunal à Vocations Multiples	Multipurpose Inter-Communal Syndicate
SIVU	Syndicat Intercommunal à Vocation Unique	Single-Purpose Inter-Communal Syndicate
SMEs	-	Small and Medium Enterprises
SOC	-	Standard Occupational Classification
TAT	Technopole Agglomération Toulousaine	Toulouse Agglomeration Technopole
TGV	Train à Grande Vitesse	Great Speed Train
TNT	Théâtre National de Toulouse	National Theatre of Toulouse
VAL	Véhicule Automatique Léger	Driverless (automatic) rubber-tyred train
ZAC	Zones d'Aménagement Concertée	Concerted Action Zone
ZAUs	Zonage en Aires Urbaines	Zoning into Urban Areas
ZEP	Zone d'Education Prioritaire	Education Priority Zone
ZFU	Zone Franche Urbaine	Urban Free Zone
ZRU	Zone de Redynamisation Urbaine	Urban Renewal Zone
ZUS	Zone Urbaine Sensible	Deprived Urban Zone